URS

DOCKET	
08-AFC-3	
DATE	MAY 17 2010
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May 17, 2010

Dockets Unit
California Energy Commission
1516 Ninth Street, MS 4
Sacramento, CA 95814

RE: Marsh Landing Generating Station
Application for Certification 08-AFC-03

On behalf of Mirant Marsh Landing, LLC, the applicant for the Marsh Landing Generating Station (MLGS), we are pleased to forward the following documents in support of the investigations being conducted by PG&E to bring the MLGS site to regulatory closure through DTSC.

- Letter from DTSC dated May 3, 2010 addressed to PG&E regarding comments on the *Facility Investigation and Risk Assessment Work Plan* prepared by AMEC Geomatrix.
- The revised Work Plan dated May 6, 2010 that addresses DTSC's comments.
- Addendum to Work Plan dated May 11, 2010 that removes the sampling and analysis of soil for TPH as diesel and motor oil and the subsequent analysis of the samples for fractionated TPH (aliphatic and aromatic fractions) if TPH as diesel or motor oil is detected in the initial analyses.
- Health and Safety Plan dated March 16, 2010, Errata dated April 7, 2010 and Addendum to Health and Safety Plan dated May 11, 2010.

These documents are submitted to the Dockets Unit and to the Proof of Service list electronically on compact disk, and one print copy will be sent to the Docket Unit.

URS Corporation

Anne C. Connell

Anne Connell
Project Manager

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DECLARATION OF SERVICE

I, Catherine Short declare that on May 17, 2010, I served and filed copies of the attached DTSC Work Plan Amendments . The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[http://www.energy.ca.gov/sitingcases/marshlanding/index.html]**. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(C*heck all that Apply*)

For service to all other parties:

__X__ sent electronically on CD to all addresses on the Proof of Service list;

_X___ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

__X___sending an original paper copy and one electronic copy on CD, mailed and emailed respectively, to the address below (***preferred method***);

OR

_____depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-3
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

C Short

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE MARSH LANDING *GENERATING STATION*

Docket No. 08-AFC-3

PROOF OF SERVICE
(Revised 04/19/2010)

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May 3, 2010

David Harnish, P.E.
Manager, Environmental Remediation
Pacific Gas and Electric Company
3401 Crow Canyon Road
San Ramon, California 94583

Dear Mr. Harnish:

The Department of Toxic Substances Control (DTSC) has completed review of the March 2010 "Facility Investigation and Risk Assessment Workplan, Marsh Landing Generating Station, Mirant Contra Costa Power Plant, Contra Costa County, California" submitted by AMEC Geomatrix, Inc. of Oakland, CA on March 17, 2010. Enclosed please find our comments.

If you have any questions please call me at 510-540-3757.

Sincerely,

Tony Natera, Project Manager
Brownfields and Environmental Restoration Program – Berkeley Office

Enclosure

cc: Ken Simas
Pacific Gas and Electric Company
3401 Crow Canyon Road
San Ramon, California 94583

Department of Toxic Substances Control
Comments on:

Facility Investigation and Risk Assessment Workplan,
Marsh Landing Generating Station, Mirant Contra Costa Power Plant
3201 Wilbur Avenue, Contra Costa County, CA, March 2010

1. **IN REFERENCE TO COVER LETTER, INTRODUCTION, BACKGROUND AND OTHER APPLICABLE SECTIONS**

Modify all pertinent sections as follows.

a. Replace the term "site" with the phrase "construction site" or "project Area". The term "site" is specifically used by DTSC, counties and city as an operational and often legal term and cannot be used to define a sub-area of an actual "site", such as the Contra Costa Power Plant "Site".

b. Do not use the term "property" to refer to the area over which DTSC currently has corrective action jurisdiction at the Contra Costa Power Plant site. The proper term is "facility".

c. Explain that The "entire facility" includes three parcels: The Mirant-owned parcel the Contra Costa Power Plant currently occupies, the parcel PG&E's Gateway Generating Station occupies, and the parcel PG&E's switchyard, or switching station as it is also known, occupies.

d. State that these three properties are located at 3201 and 3225 Wilbur Avenue in unincorporated Contra Costa County, California and do constitute the "entire CCPP facility".

e. Explain that the "Facility" is identified by Contra Costa County Assessor's Parcel Numbers (APN) 051-031-015, 051-031-016 and 051-031-017.

f. Calculate the total area of the three parcels and provide this total area as the actual area of the facility.

2. **IN REFERENCE TO SECTION 2.4 RESOURCE CONSERVATION AND RECOVERY ACT**

Include the following facts in section 2.4:

a. Authority to address releases at the Contra Costa Power Plant applies to all land under the control of the applicant at the time of the application. At CCPP that includes the three parcels described in section 1(a) above.

b. PG&E will continue to undertake corrective action to address releases at the Facility (including all three parcels) if needed in the future beyond what may be required to address releases associated with the Marsh Landing Project area.

3. **IN REFERENCE TO POTENTIAL GROUNDWATER USES AND CONTAMINATION EXPOSURE PATHWAYS**

Resolve inconsistencies between the FI/RA workplan and the San Francisco Regional Water Quality Control Board in the area of potential groundwater use. The workplan states that groundwater at the site represents an incomplete contamination exposure pathway because it is not considered a water source and because municipal drinking water is readily available in the area. Section 2.2.2 of the San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan) on the other hand states that: "Unless otherwise designated by the Water Board, all groundwater is considered suitable, or potentially suitable, for municipal or domestic water supply."

4. **IN REFERENCE TO REGIONAL HYDROGEOLOGY / GROUNDWATER AT THE SITE**

Although the groundwater flow direction and gradient across the project area was described in the workplan, include actual data and potentiometric or groundwater elevation contour maps in the report supporting these conclusions.

5. **IN REFERENCE TO GROUNDWATER AT THE SITE**

Include 2009 groundwater data from monitoring and on-site process water supply wells.

6. **IN REFERENCE TO CONTAMINATION DATA**

Submit official analytical data sheets for any results submitted in the report in a CD accompanying the actual report.

7. **IN REFERENCE TO SECTION 2.7.3 FOCUSED HUMAN HEALTH RISK ASSESSMENT AND SECTION 7.0 DEVELOPMENT OF PAH CLEANUP GOAL**

Both of these sections make statements with respect to target cancer risks of 1×10^{-5}. DTSC utilizes a point of departure of 1×10^{-6} in analyzing risks based on specific receptor exposure scenarios. Risks which are above the DTSC point of departure are subject to risk management evaluation based on site specific issues. Further action may or may not be recommended for sites with excess incremental lifetime cancer risks of greater than 1×10^{-6}.

8. **IN REFERENCE TO SECTION 8.2 EXPOSURE ASSESSMENT**

DTSC concurs with the proposal to evaluate all relevant pathways for worker exposures even where pathways may not be complete. Once the risk has been determined for the most conservative exposure scenarios, it would be appropriate to also calculate risk for workers with pathways blocked by infrastructure and hardscaping for purposes of comparison, as well as analysis of sensitivity to changes in status of infrastructure.

9. **IN REFERENCE TO SECTION 8.2 EXPOSURE ASSESSMENT**

Reference each specific table for exposure parameters within the text of this section. This would aid in the understanding, for example, that the exposure parameters for off-site residents during construction are the same and for off-site residents during operations, only certain pathways will differ for these two scenarios.

Pacific Gas and Electric Company®

David Harnish
Manager Environmental Remediation

3401 Crow Canyon Road
San Ramon, CA 94583

925) 415-6357
dehn@pge.com

May 6, 2010

Mr. Tony Natera
Hazardous Substances Engineer
Northern California Coastal Cleanup Operations Branch
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, California 94710

Subject: ***Revised Facility Investigation and Risk Assessment Work Plan***
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Dear Mr. Natera:

PG&E is pleased to provide two copies of the enclosed *Revised to the Facility Investigation and Risk Assessment Work Plan* for the Marsh Landing Generating Station (MLGS) at Mirant's Contra Costa Power Plant (CCPP). The Revised Work Plan was prepared by AMEC Geomatrix, Inc. on our behalf, and addresses your comments as per your letter dated May 3, 2010.

If you have any questions, please contact our consulting project manager Ken Simas of WAU and Associates at (925) 997-6093.

Sincerely,

David Harnish

David Harnish
Manager, Environmental Remediation

cc: Jon Sacks, Mirant Delta, LLC
Barbara Benson, PG&E
Ken Simas, P.G, WAU & Company
Jennifer Patterson, P.E., AMEC Geomatrix, Inc.

Enclosure: Revised Facility Investigation and Risk Assessment Work Plan (two copies)

REVISED INVESTIGATION AND
RISK ASSESSMENT WORK PLAN

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Submitted to:
Pacific Gas and Electric Company, San Ramon, California

Submitted by:
AMEC Geomatrix, Inc., Oakland, California

May 2010

Project 15317.000.0\4.0

AMEC Geomatrix

May 6, 2010

Project 15317.000/4

Mr. David Harnish
Pacific Gas & Electric Company
Environmental Services Department
3401 Crow Canyon Road
San Ramon, California 94583

Subject: Revised Investigation and Risk Assessment Work Plan
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Dear Mr. Harnish:

On behalf of the Pacific Gas and Electric Company (PG&E), AMEC Geomatrix, Inc. (AMEC), has prepared this Revised Investigation and Risk Assessment Work Plan for the Marsh Landing Generating Station (project area; MLGS) which is located within the Contra Costa Power Plant (CCPP) at 3201 Wilbur Avenue, Contra Costa County, California. This work plan supersedes the *Facility Investigation and Risk Assessment Work Plan* dated March 15, 2010 and has been revised based on comments provided by the California Department of Toxic Substances Control (DTSC) in a letter dated May 3, 2010. This revised work plan and the April 7, 2010 *Addendum to Facility Investigation and Risk Assessment Work Plan* constitute the complete work plan for proposed investigation and risk assessment activities in the project area. Clarification on the response to DTSC's Comments 5 and 6 is below.

Comment 5 requested that 2009 groundwater data from monitoring and process water wells be provided. There are no wells that are currently monitored at the site and no such data was generated in 2009.

Comment 6 requested that analytical data sheets be included for any data presented in the report. AMEC has included the analytical data sheets for the investigation performed in December 2009 in Appendix B of this revised work plan. The analytical data sheets for the investigation performed by Fluor Daniel in 1997 have been archived in PG&E's filing system and are not included in the revised work plan.

AMEC Geomatrix

AMEC Geomatrix, Inc.
2101 Webster Street, 12th Floor
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USA 94612-3066
Tel (510) 663-4100
Fax (510) 663-4141
www.amecgeomatrixinc.com

A revised site specific health and safety plan was submitted under separate cover. Please contact either of the undersigned if you have any questions.

Sincerely yours,
AMEC Geomatrix, Inc.

REGISTERED PROFESSIONAL ENGINEER
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JLP/RC/jh
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Enclosure

cc: Neil Ziemba, PG&E
Ken Simas, WAU & Company

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REVISED INVESTIGATION AND RISK ASSESSMENT WORK PLAN

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

1.0 INTRODUCTION

On behalf of the Pacific Gas and Electric Company (PG&E), AMEC Geomatrix, Inc. (AMEC), has prepared this Revised Investigation and Risk Assessment Work Plan (work plan) to conduct additional soil and groundwater sampling and prepare human health risk assessment at the Marsh Landing Generating Station (MLGS; the project area), which is located within the Contra Costa Power Plant (CCPP) at 3201 Wilbur Avenue, Contra Costa County, California (Figure 1). This work plan supersedes the *Facility Investigation and Risk Assessment Work Plan* dated March 15, 2010 and has been revised based on comments provided by the California Department of Toxic Substances Control (DTSC) in a letter dated May 3, 2010.

The CCPP, including the MLGS project area, is currently owned by Mirant Delta, LLC (Mirant Delta). Mirant Marsh Landing, LLC (Mirant Marsh Landing), an affiliate of Mirant Delta, has submitted an Application for Certification to the California Energy Commission (CEC) to construct and operate the MLGS, a new natural gas-fired power plant. Mirant Delta intends to subdivide the MLGS project area as a separate parcel, which will be transferred to Mirant Marsh Landing for the new power generating station. PG&E is conducting this work because, as the former property owner, it retained certain defined responsibility to remediate, as necessary, hazardous substance releases that were present at the time of its sale of the CCPP in 1999.

2.0 BACKGROUND

The project area history, regional and local geology and hydrogeology, and previous environmental investigations performed at the project area are summarized below.

2.1 PROJECT AREA SETTING

The project area is approximately 27 acres and is part of the 152-acre CCPP Facility (Facility) located at 3201 and 3225 Wilbur Avenue, approximately 2.5 miles east of the City of Antioch in unincorporated Contra Costa County. The entire Facility consist of the following three parcels:

- APN 051-031-017 – CCPP, owned by Mirant Delta
- APN 051-031-016 – Gateway Generating Station, owned by PG&E

- APN 051-031-015 – Switchyard, owned by PG&E

The MLGS project area is within Mirant Delta's CCPP. The outlines of the MLGS project area boundary and the parcels that make up the CCPP Facility are shown in Figure 2. The project area is bounded by a former paperboard manufacturing facility to the west, the San Joaquin River and CCPP operational areas to the north, CCPP operational areas to the east, and a PG&E switchyard and a CCPP tank farm to the south (Figure 2). The surrounding land use is a mixture of industrial, commercial, and residential (URS, 2008).

2.2 PROJECT AREA HISTORY AND USE

The CCPP was undeveloped prior to 1952. PG&E constructed the CCPP in 1952 and 1953. The CCPP is a steam electric generation facility that currently uses natural gas to generate power. Until the mid-1970s, Number 6 fuel oil was used to fuel the power generation units.

In 1999, PG&E sold the CCPP to Mirant Delta, previously named Southern Energy Delta, LLC. Mirant Marsh Landing, an affiliate of the current owner, Mirant Delta, has proposed constructing a new power plant facility, the MLGS, on approximately 27 acres of the CCPP (referred to as the project area; shown on Figure 2). Mirant Delta intends to create a separate parcel for the MLGS by subdividing the existing single parcel that constitutes the CCPP and transferring ownership to Mirant Marsh Landing.

The project area layout is illustrated on Figure 3. The west portion of the project area (tank farm area) contains five 120,000-barrel aboveground storage tanks (ASTs) that contained fuel oil, associated piping and equipment, and a parking area. As discussed above, the ASTs have not been in use since the mid-1970s. Only residual quantities of Number 6 fuel oil remain in the ASTs. The tanks are constructed on a base of compacted rock overlain by sand. The structural integrity of the tank bottoms is unknown. Each AST is surrounded by a berm; the areas surrounding the ASTs are unpaved (URS, 2008). The parking area currently contains recreational vehicles and boats owned by power plant employees.

The east portion of the project area (construction yard area) was used for the storage of paints and paint supplies, accumulation of asbestos waste and removal equipment, and the temporary storage of hazardous waste. A previous Phase I Environmental Site Assessment (ESA) indicated that this area was known as the Insulation and Coatings Department Office and Construction Yard (Camp Dresser and McKee [CDM], 1997). This area contains several work sheds and storage trailers that currently are used for offices for power plant staff and storage for documentation, painting equipment, and asbestos removal equipment (URS, 2008). This area also contains a hazardous waste storage shed and a non-hazardous waste storage shed on raised platforms on a concrete pad, an underground septic tank, load center, storage and fabrication building, and parking areas (URS, 2008).

2.3 ADJACENT PROPERTY USE

The majority of the project area is surrounded by the CCPP operational areas. The area to the north of the construction yard contains seven power generating units (five of which have been retired), a transformer bank, a fire pump house, and former diesel fuel ASTs. The area to the east of the construction yard contains a leach field and septic tank and a leach mound. The area south of the tank farm contains three 500,000-barrel bulk ASTs that contain residual amounts of Number 6 fuel oil.

A PG&E switchyard is located to the south of the project area. Reportedly, two oil-filled circuit breakers (OCBs) located in the switchyard immediately south of the construction yard exploded in the late 1970's. The location of these two circuit breakers is shown in Figure 3. Dielectric fluid released in the explosions potentially contained polychlorinated biphenyls (PCBs; CDM, 1997). As presented in Section 2.6, soil and groundwater samples were collected along the boundary between the switchyard and the project area during subsequent environmental investigations and analyzed for PCBs. No PCBs were detected in any of the samples.

2.4 RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) STATUS

The CCPP Facility submitted a RCRA Part A notification in 1980 for two surface impoundments and an asbestos storage area and began operating under interim status.
In 1986, the U.S Environmental Protection Agency (U.S. EPA) completed a RCRA Facility Assessment (RFA) of the CCPP Facility to identify and evaluate solid waste management units (SWMUs). A SWMU is any unit of a hazardous waste facility from which hazardous constituents might migrate. A total of nine SWMUs were identified by U.S. EPA in the 1986 RFA; however, none of the listed SWMUs are located within the MLGS project area boundary.

In June 1989, the California Department of Health Services Toxic Substances Control Division issued a Hazardous Waste Facility Permit to PG&E to receive, handle, treat, and store hazardous waste at the CCPP Facility. In 1993, when the Department of Toxic Substances Control (DTSC) established the tiered permitting program for hazardous waste treatment, PG&E submitted an Onsite Hazardous Waste Treatment Notification and requested DTSC to convert the existing Hazardous Waste Facility Permit to the tiered permitting program. Mirant Delta, the current owner of the CCPP, continues to operate processes under the tiered permitting program.

Authority to address releases at the CCPP Facility applies to all land under the control of the applicant at the time of the application. At the CCPP Facility, that includes the three parcels described in Section 2.4. PG&E will continue to undertake corrective action to address releases at the CCPP Facility if needed in the future beyond what may be required to address releases associated with the MLGS project area.

2.5 REGIONAL AND LOCAL GEOLOGY

The CCPP Facility is located in the San Joaquin River delta within the Coast Range physiographic province. Approximately 10 miles southwest of the Facility is Mount Diablo, an upper Jurassic-Cretaceous Franciscan/Ophiolite core flanked by Cenozoic sedimentary rocks. North of the Facility, across the Sacramento River-San Joaquin River confluence, the Pleistocene Montezuma Formation crops out in the Montezuma Hills, a gentler uplift than Mount Diablo. The Montezuma Formation is approximately 1,200 feet thick and consists of poorly consolidated sand, clay, silt, and gravel. At the Facility, the top of the Montezuma Formation is approximately 125 to 140 feet below ground surface (bgs). Clayey and silty beds in the upper Montezuma Formation are overlain by the Quaternary upper aquifer composed of alluvial/estuarine and dune sands (Fluor Daniel GTI, 1998).

The lithology beneath the CCPP Facility consists of sand and silty sand, with silt and clay occurring to depths of approximately 20 feet bgs in the southern part of the Facility. Lenses of clay and peat are also present in the northern part of the Facility, near the San Joaquin River. Artificial fill was encountered during previous investigations at many locations to depths of up to 2 feet bgs, and locally deeper. The fill was described in the boring logs as gravel/base rock, cobbles/coarse sand, gravel fill, and base fill. The sand, below the artificial fill to depths of approximately 10 feet bgs, is generally fine grained, poorly graded to moderately graded, with silt content varying from less than 5 percent to approximately 20 percent. With increasing depth, approximately 10 feet bgs, the sand grades coarser and is moderately to well graded (Fluor Daniel GTI, 1998).

2.6 REGIONAL AND LOCAL HYDROGEOLOGY

The CCPP Facility is located on the south bank of the San Joaquin River, which at this location is an estuary. The water level and water quality of the San Joaquin River at the Facility are affected by diurnal tidal fluctuations which cause water to flow up- or down-river past the Facility. The water level and quality in the San Joaquin River are also affected by seasonal fluctuations in flow, which are highest during winter and spring (Fluor Daniel GTI, 1998).

The upper water-bearing zone of the Facility consists of Quaternary alluvial/estuarine and dune sands interbedded with lenses of intertidal clay, silt, peaty mud, and peat. This unit is

125 to 140 feet thick and locally rests on silts and clays of the upper Montezuma Formation. The vadose zone is composed of silt, sand, and fill and ranges in thickness from 0 to 6 feet and forms the upper part of the vadose zone above the aquifer. Lenses of clay, silt, and peat form local confining layers. Beneath the Facility, the peat lenses are more common near the river, whereas the silts and clays are progressively thicker and more laterally extensive in the southern part of the Facility (Fluor Daniel GTI, 1998).

Depth to groundwater, as measured by Fluor Daniel GIT on October 20, 1997, varied from approximately 11 feet bgs in the southern part of the CCPP Facility to approximately 6 feet bgs in some wells near the river, along the northern edge of the Facility. The hydraulic gradient across the CCPP Facility, measured in October and December of 1997, ranged from 0.0005 foot per foot (ft/ft) to 0.001 ft/ft with a groundwater flow direction to the north-northwest. The October 2007 water level data and a potentiometric surface map prepared by Fluor Daniel GTI is included in Appendix A. A tidal study reportedly conducted at the Facility in April 1985 showed that the groundwater flow direction was toward the river throughout the tidal cycle (Fluor Daniel GTI, 1998).

Mirant proposes to supply the project's process water needs by using groundwater extracted from on site wells. The proposed well system would include two wells capable of providing full demand, so that one well provides redundancy. Both wells will be approximately 120 feet deep and will be located in the southern portion of the CCPP Facility near Wilbur Avenue and the access road. To evaluate whether or not the aquifer could produce a sustainable water supply for the project, Mirant Marsh Landing contracted Wittman Hydro Planning Associates, Inc., of Bloominton, Indiana, to conduct a site-specific exploration and testing program to characterize the local hydrogeologic setting (URS, 2009). The field investigation included test borings, hydraulic testing, and water quality sampling. Results of the field investigation were integrated into a transient groundwater flow model of the aquifer that was used to predict yield, evaluate wellfield designs, and evaluate the potential impacts of a pumping center at the CCPP.

The test borings confirmed the presence of a continuous zone of permeable deposits beneath the CCPP. The permeable zone, under 10 to 15 feet of surface fill, has an average thickness of 108 feet and consists of fine sand grading coarser with depth to sand and gravel (URS, 2009). Aquifer testing confirmed that this permeable unit is capable of producing large volumes of groundwater. Based on the modeling analysis, the maximum predicted drawdown 0.5-mile from the proposed well pumping at 150 gallons per minute was estimated to be about 0.25 feet (URS, 2009). The analysis also indicated that no infiltrated water from the river would reach the pumping well within the 30-year project life based on an average pumping rate of 150 gallons per minute and a maximum extraction volume of water of 50 acre-feet per year (URS, 2009).

2.7 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

PG&E conducted a Phase I ESA and Phase II sampling prior to divestiture of the CCPP to Mirant Delta. To initially evaluate the Facility, PG&E contracted CDM to conduct a Phase I ESA (CDM, 1997) for the entire CCPP Facility. Based on the results of the initial Phase I, PG&E contracted Fluor Daniel GTI to complete a Phase II environmental investigation and human health risk assessment (HHRA) in 1997 (Fluor Daniel GTI, 1998). The Phase II consisted of soil and groundwater sampling and analysis across the CCPP Facility, which included the MLGS project area. The sampling plan consisted of a biased sampling grid with approximately 150-foot spacing to assess general site conditions with a focus on specific areas or features of concern identified in the 1997 Phase I ESA.

In 2008, URS conducted a Phase I ESA on behalf of Mirant Marsh Landing in support of its Application for Certification (AFC) submitted to the CEC for construction and operation of the proposed MLGS. Mirant Marsh Landing subsequently received data requests from the CEC staff to provide additional information required by the CEC staff to complete its review of the AFC. CEC staff requested the following:

- Groundwater sampling and analysis directly between the river and Tanks 1 and 2 to assess potential impacts from the tanks;
- Soil and groundwater sampling and analysis along the southern MLGS boundary immediately north of the PG&E switchyard to assess the potential impacts to soil and groundwater as a result of the reported circuit breaker explosions in the late 1970s; and
- Soil sampling and analysis near the storm water drains that are located near the tank farm berms and within the construction yard to assess potential impacts from off-site run-on.
- A focused human health risk assessment using only data from the MLGS project area to assess potential risks to specified receptors during and after proposed construction,

Additional investigation activities were conducted at the project area by AMEC in December 2009, on behalf of PG&E in response to these data requests (as previously noted, PG&E is conducting work at the project area because it retained certain defined responsibility to remediate, as necessary, hazardous substance releases that were present at the time of its sale of the CCPP in 1999). The additional investigation was primarily focused on meeting the specific requests of the CEC; however, some additional data was collected during the investigation in anticipation of potential data requirements to bring the project area to regulatory closure through the DTSC.

Figure 3 presents the boring locations from the 1997 and 2009 investigations. The data from both investigations are summarized in Tables 1 through 8 and on Figures 4A through 16.

Analytical laboratory data reports for the investigation conducted by AMEC in 2009 are included in Appendix B. A summary of the data collected from the two investigations is presented below. For each media, data collected from the tank farm area is discussed first, followed by data collected in the construction yard.

2.7.1 Soil Analytical Results

2.7.1.1 Tank Farm Area

- **Metals:** Soil samples collected from the tank farm area were not analyzed for metals during the 1997 investigation. During the 2009 investigation, six samples collected from three borings located within the tank farm area but outside the bermed area, were analyzed for metals (Table 1 and Figure 4A). Samples were collected between 0.5 and 2.0 feet bgs. The number of detections and the minimum and maximum concentrations detected for each metal are summarized in Table 2.

- **Petroleum Hydrocarbons:** Ninety-four samples collected from 32 sampling locations were analyzed for total extractable hydrocarbons (TEH; C_9 to C_{40}) during the 1997 investigation. During the 2009 investigation, seven samples collected from three locations were analyzed for total petroleum hydrocarbons quantified as diesel (TPHd; C_{10} to C_{25}) and as motor oil (TPHmo; C_{25} to C_{40}) with silica gel cleanup. Petroleum hydrocarbon data and sampling locations are presented in Table 3 and on Figures 5 through 7. Samples were collected at depths ranging from 0.5 to 17.75 feet bgs. Concentrations of TEH up to 250 milligrams per kilograms (mg/kg) were detected in samples collected from 0.5 feet bgs. TEH was not detected at concentrations greater than 87 mg/kg in samples collected deeper than 0.5 feet bgs. During the 2009 investigation, TPHmo was detected at one location (SB-7 at 1.0 feet bgs) at a concentration of 12 mg/kg. TPHd was not detected above laboratory reporting limits in any of the samples analyzed from the 2009 investigation. TPH fractionation was performed on one sample (SB-7 at 1.0 foot bgs); this data will be used in the HHRA.

- **Volatile Organic Compounds (VOCs):** Soil samples collected from the tank farm area were not analyzed for VOCs during the 1997 investigation. During the 2009 investigation, six samples collected from three locations within the tank farm area were analyzed for VOCs (Table 3 and Figure 8 and 9). Samples were collected from between 0.5 to 2.0 feet bgs. VOCs were not detected above the laboratory reporting limit in any of the soil samples analyzed.

- **Polynuclear Aromatic Hydrocarbons (PAHs):** Eighty-one samples collected from 27 sampling locations were analyzed for PAHs during the 1997 investigation. During the 2009 investigation, 11 samples collected from 8 locations were analyzed for PAHs. Samples were collected from between 0.5 and 17.75 feet bgs. PAH data and sampling locations are presented in Table 4 and on Figure 10. Benzo(a)pyrene toxicity equivalents (TEQs) were calculated for the locations where carcinogenic PAHs were detected and are presented in Table 4 and on Figure 10. PAHs were only detected at two locations within tank farm area; TEQs at these locations are 0.12 mg/kg (boring CB4-093 at 0.5 feet bgs) and 2.19 mg/kg (boring CB4-099 at 4.5 feet bgs).

- **PCBs:** Soil samples collected from the tank farm area were not analyzed for PCBs during the 1997 investigation. During the 2009 investigation, six samples collected from three sampling locations (Table 3 and Figure 11) were analyzed for PCBs. PCBs were not detected above the laboratory reporting limit in any of the samples.

2.7.1.2 Construction Yard

- **Metals:** Soil samples were analyzed for metals during both the 1997 and 2009 investigations. In 1997, 57 samples were analyzed from 26 sampling locations and in 2009, five samples were analyzed from five sampling locations. Metals data is presented in Table 1 and sampling locations are shown on Figure 4A. Samples were collected at depths ranging from 0.5 to 14.5 feet bgs. The number of detections and the minimum and maximum concentrations detected for each metal is summarized in Table 2.

- **Petroleum Hydrocarbons:** During the 1997 investigation 57 samples collected from 26 sampling locations were analyzed for TEH. During the 2009 investigation, nine samples collected from eight sampling locations were analyzed for TPHd and TPHmo. Petroleum hydrocarbon data and sampling locations are presented in Table 3 and on Figures 5 through 7. Samples were collected at depths ranging from 0.5 to 14.5 feet bgs. The highest concentration of TEH detected during the 1997 investigation was 1900 mg/kg in the sample collected at 0.5 feet bgs from sample location CB5-007 in the southeast corner of the project area. Concentrations in several samples collected from 0.5 feet bgs exceeded 100 mg/kg; however only the sample collected at CB5-007 exceeded 700 mg/kg. TEH was not detected at concentrations exceeding 48 mg/kg in any samples collected deeper than 0.5 feet bgs. During the 2009 investigation, TPHmo was detected in five samples collected at a depth of 1.0 foot bgs at concentrations ranging from 24 to 120 mg/kg. TPHd was not detected above the laboratory reporting limit in any of the samples analyzed. TPH fractionation was performed on four samples (SB-11 at 1.0 foot bgs, SB-12 at 0.5 foot bgs, SB-14 at 1.0 foot bgs, and SB-15 at 0.5 foot bgs); this data will be used in the HHRA.

- **VOCs:** Fifty-three samples collected from 25 sampling locations (Table 3 and Figures 8 and 9) were analyzed for VOCs during the 1997 investigation. Soil samples were collected at depths ranging from 0.5 to 9.5 feet bgs. Soil samples from the construction yard area were not analyzed for VOCs during the 2009 investigation. With the exception of methylene chloride, VOCs were only detected in two soil samples collected at 0.5 feet bgs. In the sample collected at 0.5 feet bgs from boring CB5-004, xylenes were detected at a concentration of 0.0021 mg/kg. In the sample collected from boring CB5-051 the following VOCs were detected: p-isopropyltoluene (0.0028 mg/kg); 1,2,4-trimethylbenzene (0.0064 mg/kg); and 1,3,5-trimethylbenzene (0.0053 mg/kg). No VOCs, other than methylene chloride, were detected above laboratory reporting limits in samples collected deeper than 0.5 feet bgs. Methylene chloride was detected in several soil samples at concentrations ranging from 0.0033 to 0.019 mg/kg. Fluor Daniel GTI reported that the methylene chloride was a laboratory contaminant. AMEC reviewed the original laboratory data reports from the 1997 investigation and confirmed that methylene chloride was detected in several laboratory method blanks from multiple analytical batches at concentrations similar to those detected in the samples. Therefore, AMEC concludes that the methylene chloride detections are due to laboratory contamination and will not consider this data in the risk assessment.[1] The methylene chloride data are included in Table 3, but are not presented on Figure 8.

- **PAHs:** During the 1997 investigation PAH analysis was conducted on 57 samples collected from 26 sampling locations. During the 2009 investigation, 11 samples collected from eight sampling locations were analyzed for PAHs. PAH data is presented in Table 4 and sampling locations are shown on Figure 10. Samples were collected at depths ranging from 0.5 to 14.5 feet bgs. PAHs were detected in 12 samples collected from 12 locations at depths up to 4.5 feet bgs. Four of these samples had only non-carcinogenic PAHs detected. Benzo(a)pyrene TEQs were calculated for the locations where carcinogenic PAHs were detected and are presented in Table 4 and on Figure 10. TEQs ranged from 0.066 mg/kg to 73.75 mg/kg. The samples containing the highest TEQs were collected from SB-10 at 3.0 feet bgs (73.75 mg/kg) and CB5-006 at 0.5 feet bgs (4.1 mg/kg). Both of these borings are located along the southern property boundary. TEQs in the remaining samples were below 1 mg/kg.

- **PCBs:** During the 1997 investigation, 16 samples collected from 7 sampling locations were analyzed for PCBs. During the 2009 investigation, nine samples collected from eight sampling locations (Table 3 and Figure 11) were analyzed for PCBs. Samples were collected from depths ranging from 0.5 to 14.5 feet bgs. PCBs were not detected above laboratory reporting limits in any of the soil samples analyzed.

- **Asbestos:** 44 samples collected from 22 sampling locations (Table 5) were analyzed for asbestos during the 1997 investigation. Asbestos was not detected in any of the soil samples.

2.7.2 Groundwater Analytical Results

Groundwater samples were collected from temporary well points (i.e., grab groundwater samples) during both the 1997 and 2009 investigations.

2.7.2.1 Tank Farm Area

- **Metals:** Groundwater samples from the tank farm area were not analyzed for metals during the 1997 investigation. During the 2009 investigation, groundwater samples from four borings located outside the bermed areas (Table 6 and Figure 12) were analyzed for metals. The number of detections and the minimum and maximum concentrations detected for each metal is summarized in Table 7. The results suggest that there does not appear to be a significant impact to groundwater quality from metals in soil.

- **Petroleum Hydrocarbons:** During the 1997 investigation, groundwater samples from nine sampling locations were analyzed for TEH. During the 2009 investigation, groundwater samples from five sampling locations were analyzed for TPHd and

[1] Methylene chloride was conservatively identified as a chemical of potential concern in the risk assessment conducted for the CEC because, when the risk assessment was prepared, AMEC did not have access to the original laboratory data reports to confirm if methylene chloride was a laboratory contaminant.

TPHmo. Petroleum hydrocarbon data and sampling locations are shown in Table 8 and on Figure 13. In 1997, TEH was detected above the laboratory reporting limit in only the sample collected from boring CB4-076, located along the upgradient property boundary, at a concentration of 220 micrograms per liter (µg/L). Boring SB-7 was advanced in the vicinity of boring CB4-076 during the 2009 investigation; TPHd and TPHmo were not detected above the laboratory reporting limits in the groundwater sample collected from SB-7. During the 2009 investigation, TPHd and TPHmo were also not detected in groundwater samples collected from four borings located at the downgradient boundary of the tank farm.

- **VOCs:** Groundwater samples from the tank farm area were not analyzed for VOCs during the 1997 investigation. VOCs analyses were performed on samples collected from five borings located outside the bermed area (Table 8 and Figure 14) during the 2009 investigation. VOCs were not detected above the laboratory reporting limit in any of the samples.

- **PAHs:** Samples collected from nine sampling locations (Table 8 and Figure 15) were analyzed for PAHs during the 1997 investigation. Groundwater samples were not analyzed for PAHs during the 2009 investigation. No PAHs were detected above laboratory reporting limits in any of the 1997 groundwater samples.

- **PCBs:** Groundwater samples from the tank farm area were not analyzed for PCBs during the 1997 investigation. One groundwater sample from the tank farm area was analyzed for PCBs during the 2009 investigation (Table 8 and Figure 16). PCBs were not detected above the laboratory reporting limit in this sample.

2.7.2.2 Construction Yard

The groundwater data presented below for the construction yard area was generated during the 1997 investigation. Groundwater samples were not collected from the construction yard during the 2009 investigation.

- **Metals:** Groundwater samples collected from six sampling locations (Table 6 and Figure 12) were analyzed for metals in 1997; a second sample was collected from location CB5-006 and analyzed for metals in 1998. The number of detections and the minimum and maximum concentration detected for each metal is summarized in Table 7. The results suggest that there does not appear to be a significant impact to groundwater quality from metals in soil.

- **Petroleum Hydrocarbons:** Groundwater samples from six sampling locations (Table 8 and Figure 13) were analyzed for TEH. TEH was not detected above the reporting limit in any of the six samples.

- **VOCs:** Groundwater samples from five sampling locations (Table 8 and Figure 14) were analyzed for VOCs. VOCs were not detected in any of the samples with one exception; methylene chloride was detected at a concentration below the reporting limit (2.6 µg/L) in one sample. As discussed above, AMEC reviewed original laboratory data reports from the 1997 investigation and concluded that methylene chloride was a laboratory contaminant, based on the detection of methylene chloride in several laboratory method blanks in multiple analytical batches.

Therefore, this data will not be considered in the risk assessment.[2] The methylene chloride data are included in Table 8 but are not presented on Figure 14.

- **PAHs:** Groundwater samples from six sampling locations (Table 8 and Figure 15) were analyzed for PAHs. No PAHs were detected above laboratory reporting limits in any of the groundwater samples.

- **PCBs:** Groundwater samples collected from three sampling locations (Table 8 and Figure 16) were analyzed for PCBs. PCBs were not detected above laboratory reporting limits in any of the groundwater samples.

2.7.3 Focused Human Health Risk Assessment

In response to the CEC data request, a focused human health risk assessment (HHRA) was conducted to evaluate whether the chemicals detected at the project area warrant further consideration in terms of mitigating potential threats to human health through active remedial and/or risk management measures. The focused HHRA was prepared in accordance with the U.S. EPA and the California Environmental Protection Agency (Cal/EPA) guidelines.

Potential noncarcinogenic hazard indices and theoretical excess lifetime cancer risks were estimated quantitatively for hypothetical construction/utility workers and hypothetical off-site residents during construction, and hypothetical future on-site workers and hypothetical future off-site residents during plant operations. Because the risks to hypothetical off-site residents during construction and during plant operations are below the *de minimis* risk levels (less than one-in-one-million (1×10^{-6}) theoretical excess cancer risk and less than a noncarcinogenic hazard index of 1), potential risks and hazards to off-site workers were not quantitatively evaluated.

The results of the focused HHRA indicate that the estimated noncarcinogenic hazards for each receptor are below a hazard index of 1. The estimated hypothetical lifetime excess cancer risk are below the 1×10^{-6} *de minimis* risk level for all receptors evaluated except the future hypothetical on-site worker. Under a hypothetical scenario including conservative assumptions that soil is left exposed following the completion of construction activities and no risk management measures are implemented, and further assuming that incidental ingestion and dermal contact with soil occur, the estimated theoretical lifetime excess cancer risk for a hypothetical future on-site worker is 4×10^{-6}. This estimate is above the *de minimis* risk but within the acceptable regulatory risk range and below the cumulative cancer risk of 1×10^{-5}; a level deemed appropriate for the project area, which is planned for redevelopment as an

[2] Methylene chloride was conservatively identified as a chemical of potential concern in the risk assessment conducted for the CEC because, when the risk assessment was prepared, AMEC did not have access to the original laboratory data reports to confirm if methylene chloride was a laboratory contaminant.

industrial power generation facility. The primary chemicals contributing to the theoretical cumulative health risk estimate are carcinogenic PAHs in soil, particularly from samples collected near the southeast project area boundary.

3.0 SITE CONCEPTUAL MODEL

As described in the U.S. EPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (U.S. EPA, 1988), a site conceptual model (SCM) integrates information related to the project area setting and the environmental hydrogeologic system, identifies the primary source of constituents in the environment, shows how constituents at the original point of release might move in the environment, and identifies the hypothetical exposure pathways that are applicable to human health or the environment. A preliminary SCM for the project area has been developed based on existing data and the planned future use of the project area to support a new power plant facility (Figure 17). The SCM serves as the foundation for investigation and risk assessment strategies to address potential environmental issues at the project area.

Based on existing sampling data, constituents are present in soil as a result of historical operations at the project area. Constituents that have been detected in soil are classified as volatile (e.g., low levels of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene), semi-volatile (e.g., PAHs), and non-volatile (e.g., petroleum hydrocarbons and metals). Although results suggest that groundwater has not been significantly impacted, petroleum hydrocarbons (based on historical sampling data collected in 1997) and metals are the primary constituents that have been detected in groundwater. As discussed previously, historical depth to groundwater measurements have varied from approximately 11 feet bgs in the southern part of the Facility to approximately 6 feet bgs in some wells near the river, along the northern edge of the Facility. Groundwater flow direction is generally to the north-northwest towards the San Joaquin River.

Volatile constituents can potentially migrate from soil to indoor or ambient air. Semi-volatile and non-volatile compounds can potentially be resuspended with soil particulates and potentially be present in ambient air and be transported to on- or off-site locations.

Potential human receptors are populations potentially exposed to these constituents, either on site or as a result of chemical migration to off-site areas. Given the future use of the property as a power plant, the primary potential human receptors are construction workers involved in building the power plant and industrial workers after the plant is built. Construction workers are typically involved in trenching, excavating, and earth moving activities. Nearby off-site residents and workers are potential receptors if constituents are migrating off site as a result of construction activities or from wind erosion from unpaved areas once the power plant is constructed and complete.

Hypothetical exposure pathways must first be evaluated to determine if they might be "complete" (receptors can come into contact with project area-related compounds), "incomplete" (no exposure is possible), or "potentially complete" (exposure may occur if project area conditions change). Identification of complete or potentially complete exposure is defined by four elements:

- A source and mechanism of constituent release to the environment.
- An environmental receiving or transport medium (e.g., air, soil) for the released constituent.
- A point of potential contact with the medium of concern.
- An exposure route (e.g., ingestion) at the contact point.

A hypothetical exposure pathway is considered "complete" if all elements are present. Only complete hypothetical exposure pathways will be evaluated in the risk assessment. Although complete exposure pathways have been identified for constituents in soil and groundwater as further discussed in Section 7.0, additional soil data near features within the tank farm and other selected locations within the project area and current groundwater data are warranted to assess potential exposures. These identified data gaps are addressed below in Section 4.0.

4.0 INVESTIGATION OBJECTIVES

Based on information presented in the two Phase I reports (CDM, 1997 and URS, 2008) and the data collected during the 1997 and 2009 soil and groundwater investigations (Fluor Daniel GTI, 1998 and AMEC, 2010), it appears that the previous investigations generally provided adequate coverage to address possible impacts from project area operations and features. However, AMEC has identified several data gaps that will be addressed in the proposed investigation in order to support the health risk assessment and subsequent preparation of a Corrective Measures Proposal to evaluate and recommend any necessary corrective action for the project area. As such, the objectives of the proposed investigation are to:

- assess the presence of lead in shallow soil adjacent to each AST within the tank farm area;
- collect soil and groundwater TPH data to obtain information regarding the aromatic and aliphatic fractions of the petroleum for use in a HHRA;

- collect groundwater samples at the southern, upgradient boundary of the project area to assess whether off-site, upgradient sources are migrating onto the project area; and
- conduct additional soil sampling in certain areas where PAHs were detected during previous investigations to support removal activities.

The objectives of the proposed investigation are discussed in more detail below.

4.1 ASSESS LEAD AND PCBS ADJACENT TO ASTS

During the previous investigations, soil and groundwater samples collected from within the tank berms were not analyzed for metals. The ASTs have been present at the project area since 1953. It is likely that the ASTs are or have been coated with lead-based paint, which may have chipped or been sandblasted in the past. Therefore, AMEC proposes to collect shallow soil samples adjacent to each AST to evaluate the possible presence of lead in surface soil.[3] In addition, PCBs have not been detected during previous investigations at the CCPP Facility, but they have reportedly been found to be present in paints used at other power plant sites. Therefore, in order to be conservative and definitely rule out the presence of PCB impacts, AMEC proposes to include PCB analyses of the shallow soil samples collected adjacent to the ASTs

4.2 FRACTIONATED PETROLEUM HYDROCARBON DATA

The 1997 investigation conducted at the project area generated a significant amount of petroleum hydrocarbon data for soil and groundwater. During that investigation, petroleum hydrocarbons were reported as TEH, which included the carbon range C_9 to C_{40}. Historically, aggregated petroleum hydrocarbon data have not been specifically evaluated in risk assessments because the results represent mixtures of chemicals that do not have descriptive health criteria. However, DTSC has recently provided interim guidance which provides a methodology to quantitatively include TPH measurements in a risk evaluation (DTSC, 2009a). This interim guidance will be followed in the HHRA to assess potential health effects associated with TPH. As such, fractionated TPH soil and groundwater data along with aggregate TPH data are needed to assess petroleum hydrocarbons that may be present at the project area. In addition, consistent with the DTSC guidance, hexane, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene data will also be collected for use in evaluating the fractionated TPH data in the HHRA. This data will be used directly in the risk assessment and will be used to evaluate historical TPH data. Some fractionated data were collected during the 2009, investigation, however, additional data are needed to be representative of project area conditions.

[3] Due to Mirant's tank decommissioning schedule, these samples were collected on March 11, 2010.

Soil samples for fractionated TPH analysis will be collected at targeted and non-targeted locations across the project area. The targeted locations are near the aboveground valves and piping at each AST in the tank farm area, as these are areas where evidence of potential releases have been observed.[4] Several additional non-targeted locations will be sampled to provide general coverage of both the tank farm and construction yard area. Groundwater samples will be collected at seven locations to provide general coverage of the project area.

4.3 UPGRADIENT GROUNDWATER

AMEC proposes to collect groundwater data along the upgradient MLGS project area boundary to assess the possible presence of upgradient sources migrating onto the MLGS project area. Additional ASTs associated with the CCPP and a PG&E switchyard are located immediately upgradient of the project area.

Within the tank farm area upgradient of the MLGS project area, relatively low concentrations of TEH (120 to 230 ug/L) were previously detected at two locations during the 1997 Phase II ESA. Within the switchyard, two reported OCB explosions during the 1970s may have been associated with potential releases of dielectric fluid. However, numerous soil and groundwater samples were collected along the switchyard boundary and analyzed for PCBs during both the 1997 and 2009 investigations; no PCBs were detected in any of the samples collected.

AMEC proposes to collect grab groundwater samples from three locations near the upgradient boundary of the project area to supplement the previous groundwater data collected in nearby areas.

4.4 FURTHER ASSESS PRESENCE OF PAHS

As discussed in Section 2.8.3, carcinogenic PAHs were the primary constituents contributing to the theoretical risks calculated in the focused HHRA for hypothetical future onsite workers. PAH concentrations in soil samples collected from three locations (CB4-099, CB5-006, and SB-10) were significantly higher than those collected from other locations at the project area. CB4-099 is located in the northeast corner of the project area and contained PAHs with a TEQ of 2.19 mg/kg at 4.5 feet bgs. AMEC will advance two borings in this area; one at the approximate location of previous boring CB4-099 to confirm the PAH detections, and a second south of this location between previous boring location CB4-099 and previous boring location CB4-090, where PAHs were not detected during the 1997 investigation. Soil samples from the boring south of CB4-099 will only be analyzed if carcinogenic PAHs are detected in the initial boring.

[4] Due to Mirant's tank decommissioning schedule, targeted shallow soil samples near the ASTs were collected on March 11, 2010.

The samples containing the highest TEQs were collected from SB-10 at 3.0 feet bgs (73.75 mg/kg) and CB5-006 at 0.5 feet bgs (4.1 mg/kg). Both of these borings are located along the southern property boundary suggesting a localized area where carcinogenic PAHs are present in shallow soil. Although the theoretical risks to hypothetical future workers calculated in the Focused HHRA were generally within the range of acceptable risk for industrial workers, PG&E is planning to perform soil removal activities in this area to remove PAH-affected soil, thereby reducing the potential risk to human health associated with hypothetical exposure to the soil. Proposed soil removal activities will be further described in the Corrective Measures Proposal. Seventeen additional borings will be advanced in the vicinity of previous borings SB-10 and CB5-006 to delineate the general extent of PAHs in this area. These borings will be advanced at an approximate 30-foot grid spacing. Some samples collected from this area will be held pending results of initial analyses. The objective of this soil sampling is to generally delineate the area of PAH-affected soil to support scoping of the planned removal action.

5.0 FIELD SAMPLING AND ANALYSIS PLAN

To accomplish the investigation objectives outlined above, AMEC proposes to collect soil and groundwater samples at 44 locations. The proposed investigation locations are shown on Figure 18 and the proposed sampling and analysis plan is outlined in Table 9. Table 9 also states the data objective for each boring. Additional soil or groundwater samples may be collected during field activities or additional sample analyses conducted based on field observations.

5.1 PRE-FIELD ACTIVITIES

Prior to conducting field activities, AMEC will obtain a boring permit from Contra Costa County Environmental Health Department (CCEHD), mark proposed drilling locations, contact Underground Service Alert (USA), and retain a private utility location contractor to clear the boring locations for utilities. All proposed locations will also be cleared with plant operations. Additionally, AMEC has prepared a site-specific health and safety plan.

5.2 FIELD ACTIVITIES

AMEC will retain a California-licensed driller to perform drilling activities. All boreholes will be initially advanced using a hand auger to a depth of 5 feet bgs to clear for utilities. Borings for the sampling of groundwater will be further advanced using a direct-push drill rig equipped with a dual-tube direct-push sampling system. Soil will be continuously cored for lithologic logging. A lithologic log will be prepared for each boring by a trained field geologist under the supervision of a California Professional Geologist using visual-manual procedures of the American Society for Testing and Materials (ASTM) Standard D2488-90 for guidance, which is based on the Unified Soil Classification System (USCS). Non-dedicated downhole sampling equipment will be steam cleaned or triple-washed between each soil boring location and prior to reuse. Field screening of soil samples for organic vapors will be performed using a portable photoionization detector (PID) and any detections will be logged.

Soil samples will be collected for laboratory analysis at depth intervals shown in Table 9 using a slide hammer. Soil samples to be analyzed for semivolatile constituents will be collected in new, clean brass sleeves and sealed at each end with Teflon sheets, plastic end caps, and silicone tape. Soil samples to be analyzed for non-volatile constituents will be collected in either new, clean brass sleeves and sealed as described above or in new, clean glass jars. Samples will be labeled, sealed in plastic bags, placed in an ice-chilled cooler, and transported to a state-certified analytical laboratory under AMEC chain-of-custody procedures.

AMEC will collect grab groundwater samples from first-encountered groundwater at the seven borings indicated on Table 9. The exact depth intervals to be sampled will be determined in the field, based on the depth to groundwater and lithologic observations. Once the sampling interval has been determined, a pre-packed well screen, attached to polyvinyl chloride riser, will be installed through the outer drive casing. The lower drive casing will then be lifted approximately 5 feet to allow groundwater to flow into the borehole. The groundwater sample will be collected through the pre-pack well screen which will help filter out excess fines from the groundwater sample. If adequate groundwater recharge occurs, AMEC will purge at a low-flow rate to reduce turbidity prior to collecting a groundwater sample at each location. Prior to sampling, the dissolved oxygen, pH, and oxidation/reduction potential (ORP) of the groundwater will be measured and recorded in the field logs. These measurements will provide geochemical data, which may be used in evaluating groundwater results. If groundwater recharge is insufficient to allow for purging prior to sampling, a sample will be collected without purging.

Groundwater samples will be collected in appropriate new, laboratory-supplied containers, labeled, placed in an ice-chilled cooler, and transported to a state-certified analytical laboratory under AMEC chain-of-custody procedures.

Following completion of sampling activities, the drilling contractor will fill the borings with grout using a tremie pipe, according to CCEHD requirements. AMEC will use a global positioning system (GPS) unit to collect location information for all boring locations. The GPS unit to be used has an accuracy of approximately +/– 1 foot in the horizontal plane, and approximately +/– 3 feet in elevation.

5.3 ANALYTICAL METHODS

Samples will be analyzed by Creek Environmental Laboratories, Inc. (Creek), of San Luis Obispo, California. Soil and groundwater samples will be analyzed for the constituents indicated on Table 9 using the following methods:

- TPHd and TPHmo using U.S. EPA Method 8015M with silica gel preparation prior to analysis;
- VOCs using U.S. EPA Method 8260B;
- PCBs using U.S. EPA Method 8082;
- PAHs using U.S. EPA Method 8270C with selective ion monitoring;
- lead using EPA Method 6010B; and
- Title 22 metals using EPA Method 200.8/7470. Groundwater samples will be filtered in the field with a 0.45-micron filter prior to metals analysis.

If TPHd and/or TPHmo is detected in a sample, the following analyses will also be conducted:

- TPH Fractionation based on the DTSC's *Interim Guidance on Evaluating Human Health Risks from TPH* (DTSC, 2009a);
- Naphthalene, 1-methylnaphthalene, and 2-methylnaphtalene using U.S. EPA Method 8270C; and
- Hexane using EPA Method 8260.

5.4 INVESTIGATION-DERIVED WASTE MANAGEMENT

Soil cuttings, purge water, and rinse water generated during drilling will be temporarily stored at the CCPP in labeled, Department of Transportation (DOT)–approved 55-gallon drums, pending profiling, transportation, and off-site disposal or recycling at an appropriate facility. All waste containers will be clearly labeled with generator contact and phone number, drilling location(s), and date of generation. PG&E will be responsible for arranging for waste profiling and disposal.

Any disposable personal protection equipment (e.g., gloves, Tyvek® clothing, etc.) will be disposed as non-hazardous waste in the municipal trash.

6.0 QUALITY ASSURANCE PROJECT PLAN

The following sections comprise the quality assurance project plan (QAPP). The objective of the QAPP is to describe the quality assurance/quality control (QA/QC) procedures that AMEC will follow during investigative activities at the project area and to assure production of data that are scientifically valid and are representative of field conditions.

Key project personnel and general responsibilities for each position are summarized below:

Principal-in-Charge (Susan Gallardo) – The Principal-in-Charge is responsible for reviewing all technical and policy decisions regarding the project.

Technical Reviewer (Robert Cheung) – The Technical Reviewer is responsible for reviewing technical aspects of the work including strategies, methods to be used, and key reports.

Project Manager (Jennifer Patterson)– The Project Manager is responsible for the scope, cost, and technical considerations related to the project; staff and project coordination; and implementation of review of overall project quality related to the collection, completeness, and presentation of data. The project manager is also responsible for interaction and coordination with PG&E, the regulatory agencies, and AMEC Geomatrix personnel.

Project Quality Assurance Officer (Jonathan Skaggs) – The Project Quality Assurance (QA) Officer is responsible for reviewing the project QA program as it relates to the collection and completeness of data from field and laboratory operations, including the training of personnel to follow established protocols and procedures. The QA Officer also monitors the maintenance and use of equipment necessary to conduct field work.

6.1 SAMPLE COLLECTION, HANDLING, AND ANALYTICAL METHODS

The sample collection procedures and analytical method to be used during these investigative activities are presented in Section 5 of this report. Departures from these procedures and methods will be documented and discussed in the report of work findings. A summary of the required sample containers, preservation, and holding times for each anticipated analytical method is included in Table 10. Upon receipt of the samples, the analytical laboratory will document the condition of the samples, confirm the chain-of-custody record corresponds to that on the sample labels, and log in the samples.

6.2 QUALITY CONTROL SAMPLES

To evaluate the precision and accuracy of analytical data, field and laboratory quality control samples will be collected and analyzed. The minimum project requirements for collection and analysis of these samples are described below. It is anticipated that analyses will be performed by Creek, a California-certified analytical laboratory. Creek's laboratory quality manual dated August 31, 2009, is available upon request.

6.2.1 Equipment Blanks

An equipment field blank is prepared by pouring deionized water through the soil or groundwater sample collection device into sample bottles at the time of sample collection to check cleaning procedures. The deionized water should be obtained from the laboratory or from a clean, unopened, commercial container. Equipment blanks are preserved in the same manner as the groundwater samples and are transported with the project samples. Equipment blanks will not be identified as blanks to the laboratory. The sample identification number and time of sampling will be recorded. A minimum of one equipment blank will be obtained from each non-dedicated and reusable sampling device per day and analyzed using the U.S. EPA methods that will be used on soil or water samples collected that day.

6.2.2 Trip Blanks

A trip blank consists of deionized water that is added to the sample bottle by the subcontracted laboratory. It accompanies the other sample containers throughout the trip from the laboratory to the field and back to the laboratory. The purpose of a trip blank is to check for possible bottle, preservative, laboratory, or environmental contributions to the sample analytical results. If volatile compounds are to be analyzed for, a minimum of one travel blank per sample cooler containing groundwater samples will be collected and analyzed for volatile compounds.

6.2.3 Field Duplicate Samples

A field duplicate is an additional water sample that is collected from the same water source in an identical container and given a different sample identification number so that the laboratory will not know it is a duplicate. Duplicate samples will be submitted blind to the laboratory for identical analyses to check for analytical precision. Duplicate samples will be collected at the rate of at least one duplicate for every 20 project water samples collected for analysis by a given method.

6.2.4 Matrix Spikes and Matrix-Spike Duplicates

A matrix spike is an aliquot of a project sample, either soil or water, to which the laboratory adds a known quantity of a compound prior to sample extraction/digestion and analysis. The reported percent recovery of the known compound in the sample indicates the presence or absence of any effects of the matrix on the sample analyses. A matrix-spike duplicate is an aliquot of the matrix-spike sample that is analyzed separately; the results indicate the precision of the analytical method. A matrix-spike and matrix-spike duplicate analysis will be performed at least once with each analytical batch of soil or water samples, with a minimum of one for every 20 samples. The sample to be used for matrix-spike/matrix-spike duplicate analyses will be specified on the chain-of-custody form.

6.2.5 Laboratory Blanks

Laboratory blanks consist of laboratory-prepared samples of deionized and/or organic-free water that are analyzed prior to each batch of samples. The purpose of these samples is to check for laboratory contamination during preparation and analysis of soil or water samples. Laboratory blanks will be prepared and analyzed at least once for each analytical batch, with a minimum of one for every 20 samples.

6.2.6 Laboratory Control Standard

A laboratory control standard (LCS) or check sample is a sample prepared by the laboratory or commercial source, which contains known concentrations of the analytes of concern. It is subjected to the same preparation/extraction procedures as a soil or water sample, and is prepared independently of calibration standards. The LCS recovery checks the accuracy of the analytical methods and equipment, and will be prepared and analyzed at least once with each analytical batch, with a minimum of one for every 20 samples. LCS recoveries should fall within the limits set by the laboratory. Laboratory limits are based on a statistical analysis of all samples analyzed at the laboratory and are generally more stringent than the limits set by the U.S. EPA in SW-846.[5]

6.2.7 Laboratory Surrogate Compounds

A surrogate spike is an addition to the soil or water sample of a known concentration of an organic compound that is not expected to be a compound of concern in the sample. Every blank, quality control (QC) sample, and project sample will be spiked with surrogate compounds if specified by SW-846 for the particular analytical method (they are not required for metals analyses). The recovery of the surrogate evaluates the possible presence of systematic extraction problems. It should fall within the limits set by the laboratory in accordance with procedures specified by the method.

6.3 LABORATORY REPORTING LIMITS

The laboratory reporting limits for constituents of concern during these investigative activities are presented in Appendix C. Actual reporting limits cannot be guaranteed due to sample matrix properties, interference from other compounds present, and analytical instrument calibration variability. Because the analytical data will be used in a risk assessment, these reporting limits for soil and groundwater have been evaluated and selected so that they are below applicable regulatory screening levels for the media being analyzed.

[5] http://www.epa.gov/waste/hazard/testmethods/sw846/online/index.htm

6.4 DATA ASSESSMENT

The validity of data will be measured in terms of precision, accuracy, and completeness. The ways in which these three parameters will be evaluated for project data are described below.

6.4.1 Precision

For data generated by the laboratory, data precision will be estimated by comparing analytical results from duplicate samples and from matrix spikes and matrix spike duplicates. The comparison will be made by calculating the relative percent difference (RPD) given by:

$$RPD = \frac{2(S_1 - S_2)}{S_1 + S_2} x\ 100 \text{ percent}$$

Where: S_1 = sample
S_2 = duplicate

The goals for data precision for duplicate samples are summarized in Creek's August 31, 2009 quality manual, which is available upon request. RPD goals are not applicable when the sample results are less than two times (organics) or five times (inorganics) the reporting limit. In those cases, duplicate results are acceptable when the absolute difference between the results is less than the reporting limit. When a compound is detected in one duplicate sample but is not detected at or above the laboratory reporting limit in the other sample, then the results are acceptable when the absolute difference between the detected result and the reporting limit is less than the reporting limit.

6.4.2 Accuracy

Data accuracy will be assessed for laboratory data only and is based on recoveries (R), expressed as the percentage of the true (known) concentration, from laboratory-spiked samples and QA/QC samples generated by the analytical laboratory. The equation for calculating recoveries is:

$$R = \frac{(A - B)}{T} x100 \text{ percent}$$

Where: A = measured concentration after spiking
B = background concentration
T = known true value of spike

This information will be reviewed periodically by the Project Manager or Project QA Officer.

6.4.3 Completeness

Data generated during the soil and groundwater sampling program will be evaluated for completeness, that is, the amount of data meeting project QA/QC goals. If data generated during field operations or via analytical procedures appear to deviate significantly from observed trends, the Project Manager or Project QA Officer will review field or laboratory procedures with the appropriate personnel to evaluate the cause of such deviations. Where data anomalies cannot be explained, resampling may be necessary.

6.5 DATA VALIDATION AND USABILITY

This section describes the QA/QC activities that will occur after the data collection phase of the project is completed. Implementation of this section will determine whether or not the data conform to the specified criteria, thus satisfying the project objectives.

Data validation is the process of reviewing data and accepting, qualifying, or rejecting data on the basis of sound criteria. Project personnel will validate field data by reviewing it to identify inconsistencies or anomalous values. The data validation approach for laboratory data will consist of a systematic review of the primary and QC sample analytical results. Data will be validated according to applicable guidelines set forth in the following sources, as appropriate:

- U.S. EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (OSWER 9240.1-48, EPA-540-R-08-01), June 2008; and

- U.S. EPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45, EPA-540-R-04-004), October 2004.

Best professional judgment will be utilized, as necessary, in any area not specifically addressed by the U.S. EPA guidelines listed above.

Data validation will include a data completeness check of each data package and a thorough review of laboratory reporting forms. Specifically, this review will include:

- review of data package completeness;

- review of sample holding times;

- review of duplicate, blank, surrogate, and spike sample results;

- review of laboratory analytical reporting limits relative to the project area monitoring program reporting limits;

- calculation and review of field duplicate relative percent differences;

- review of the laboratory reporting forms to evaluate whether the laboratory QC requirements were met and to determine the effect of exceeded QC requirements on the precision, accuracy, and sensitivity of the data; and

- application of standard data quality qualifiers to the data.

7.0 DEVELOPMENT OF PAH CLEANUP GOAL

The results of the focused HHRA concluded that under a hypothetical scenario in which surface and subsurface soil at the project area is left exposed and no risk management measures are implemented once the power plant is constructed, such conditions may result in a calculated theoretical risk to hypothetical future on-site workers that is above the *de minimis* level of 1×10^{-6}. Under this assumed scenario, carcinogenic PAHs in soil are the primary risk-driving COPCs. Reducing the concentrations and mass of affected soil would reduce the potential health risk and will be considered a remediation action objective. In support of the remediation action objective, remediation cleanup goals for carcinogenic PAHs will be developed to help define the extent of impacts in soil and target areas for remediation to protect human health. Following the completion of remediation activities, the concentrations of carcinogenic PAHs remaining in soil will be evaluated using statistical tools to confirm that the average concentrations are below the proposed cleanup levels.

8.0 HEALTH RISK ASSESSMENT

As indicated in the Site Conceptual Model above, the data collection and investigation procedures described herein are designed to obtain additional data to conduct a site-specific HHRA consistent with U.S. EPA and Cal/EPA guidelines. The additional data collected will be incorporated into the focused HHRA previously prepared for the CEC and a new updated HHRA will be prepared. Because the elevated concentrations of carcinogenic PAHs reported in soil near the southeast corner of the project area will be removed as part of the Corrective Measures Proposal, the updated HHRA will only assess data that will remain at the project area. The purpose of the HHRA is to provide an assessment on the potential for adverse human health as a result of hypothetical exposure to chemicals detected in soil and/or groundwater at the project area assuming no remedial action were to take place.

The updated HHRA will follow standard and customary practice as specified by Cal/EPA, DTSC, Human and Ecological Risk Division (HERD); and the U.S. EPA. Cal/EPA guidance will be used where different from U.S. EPA guidance. The primary guidance documents that will be used in the preparation of the HHRA include the following:

- DTSC's, Supplemental Guidance for Human Health Multimedia Risk Assessment of Hazardous Waste Sites and Permitted Facilities (DTSC, 1996);
- DTSC's, Preliminary Endangerment Assessment Guidance Manual (DTSC, 1999);
- U.S. EPA's Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual, Part A (U.S. EPA, 1989); and

Additional guidance that addresses site-specific issues and chemical constituents will also be consulted. In addition, information gathered from the latest scientific literature may be consulted and incorporated with the prior approval of Cal/EPA, DTSC, HERD toxicologists.

The updated HHRA will be organized into sections that are consistent with the risk assessment steps outlined by the U.S EPA and Cal/EPA: data evaluation, exposure assessment, toxicity assessment, risk characterization, and uncertainties. If warranted based on the results, the updated risk assessment also will provide the basis for developing remediation cleanup goals and strategies consistent with the intended use of the property as part of the Corrective Measures Proposal.

8.1 DATA EVALUATION

As part of data evaluation, project area characteristics and analytical data will be evaluated to identify the constituents that are potentially related to the project area and for which there are data of sufficient quality to be used in a quantitative risk assessment (U.S. EPA, 1989). Project area investigations have documented the presence of TPH, VOCs, PAHs, and metals in soil and TPH and metals in groundwater.

The methods for evaluating data usability for the updated HHRA will be in general accordance with the procedures outlined in the U.S. EPA publication *Guidance for Data Usability in Risk Assessment – Parts A and B* (U.S. EPA, 1992a). AMEC will evaluate the usability of the data based on: 1) documentation; 2) data sources; 3) analytical methods; 4) data review; and 5) data quality indicators (precision, accuracy, completeness, representativeness, and comparability). Data judged to be of sufficient quality will be tabulated. A summary of data for constituents detected at the project area, including frequency of detection, range of detection limits, and range of detected values, will be presented in the updated HHRA. The detected constituents will then be evaluated to identify chemicals of potential concern (COPCs) following a thorough review of data, including frequency of detection, magnitude of detected concentrations, and spatial distribution of detected concentrations (i.e., potential hot spots). Except for metals and essential nutrients (e.g., iron, potassium, and sodium), constituents detected in at least one sample in each medium will be identified as COPCs.

Because metals occur naturally in soil, metal concentrations in soil will be statistically compared to Facility-specific background using the Wilcoxon-Mann-Whitney (WMW) test or the Gehan test, a similar methodology to the Wilcoxon Rank Sum Test presented in Cal-EPA guidance (DTSC, 1997), to identify project area-related COPCs. The Mann-Whitney test examines whether measurements from one population are the same as measurements from another population. This test is non-parametric (i.e., not sensitive to the underlying distribution of the data) and can be used with censored data (i.e., non-detect values).

The Facility-specific background data set considered appropriate and representative for comparison with project area data for the selection of COPCs is based on data previously collected by Fluor Daniel GTI (1988). Soil samples were collected and analyzed for metals at depths ranging from 0.5 to 24.5 feet bgs from 25 borings in an area located along the eastern boundary of the CCCP (Figure 4B). The samples were selected by Fluor Daniel GTI based on their locations away from the main plant operational areas. A summary of the Facility-specific data is presented in Table 11.

For metals in groundwater, all metals detected in groundwater will conservatively be retained as COPCs due to the lack of a Facility-specific background dataset.

As previously discussed, elevated concentrations of carcinogenic PAHs reported in soil near the southeast corner of the project area will be removed as part of the Corrective Measures Proposal. As such, these data will not be considered in the updated HHRA.

8.2 Exposure Assessment

As discussed in Section 3, potential future receptors include a hypothetical construction worker (e.g., trench/excavation) and hypothetical off-site residents/workers during construction, hypothetical on-site outdoor/indoor workers, and hypothetical off-site residents/workers during operations. It should be noted that any potential impacts to receptors will be managed under a risk-management plan which will incorporate all necessary protective measures. The exposure assessment hypothetically assumes that no protective measures will be employed.

For hypothetical future construction workers (Table 12), if no protective measures were employed, several complete exposure pathways have been identified, including inhalation of ambient air (particulates and volatiles) and dermal contact with and ingestion of surface and subsurface soil during construction. In addition, construction workers may enter vaults or work in utility trenches that do not have mechanical ventilation making the exposure potentially different than outdoor air (and more similar to an indoor scenario). Potential significant exposures to groundwater are unlikely because future intrusive activities to the water table likely would require dewatering of trenches or excavations, thereby limiting dermal contact with groundwater by a hypothetical future construction worker. As an additional measure, any potential impacts associated with dermal contact with groundwater by future construction workers will be managed under a risk management plan. However, for the purpose of the risk assessment, potential hypothetical exposure from dermal contact with shallow groundwater will be quantitatively evaluated. The HHRA will conservatively assume that hypothetical future construction workers would be hypothetically exposed to constituents in groundwater via dermal contact and inhalation of volatiles when a trench is filled with shallow groundwater.

Nearby off-site residents could potentially be exposed to volatile constituents or dust particulates during construction of the power plant (Table 13). The exposure pathway considered potentially complete for off-site residents includes inhalation of VOCs and particulates potentially released during construction activities. If needed, a risk management plan will be implemented to ensure that off-site receptors are fully protected.

Following the completion of construction activities (i.e., during plant operations), off-site residents also could potentially be exposed to volatile COPCs or dust particulates in ambient air (Table 13). However, potential exposures to volatile COPCs by off-site residents are not expected to be significant because intrusive construction-related activities would have been completed and the lack of residual sources given that detected concentrations of volatile constituents are extremely low. Once the power plant is constructed, a majority of the project area will be covered by power blocks and associated infrastructure, buildings, tanks, pavement, gravel, and compacted soil. Therefore, potential exposures from inhalation of particulates at an off-site location also are expected to be insignificant. However, to account for the possibility that some of the areas within the project area may be exposed, inhalation of airborne particulates as dust will be quantitatively evaluated.

Off-site commercial/industrial workers could potentially be exposed to COPCs during both construction and subsequent plant operations similar to off-site residents (Table 14). The potential exposure of off-site commercial/industrial workers, however, would be expected to be less than off-site residents due to shorter exposure frequencies and duration. Therefore, only the potential exposure of off-site residents will be evaluated quantitatively.

During plant operations, future hypothetical outdoor industrial worker exposure pathways are incomplete because a majority of the project area will be covered by power plant buildings, associated infrastructure and equipment, and paved hardscape (e.g., asphalt concrete parking). Thus, potential direct pathways from inhalation of particulates in ambient air, dermal contact with soil, and incidental ingestion of soil are incomplete for a hypothetical future worker. However, these pathways will conservatively be evaluated for the hypothetical outdoor worker (Table 15). For the hypothetical indoor industrial worker, the primary pathway is the potential migration of volatile constituents in soil into indoor air of enclosed structures (Table 16).

Use of first groundwater as a drinking water source is considered an incomplete exposure pathway under current conditions because municipal drinking water is readily available. Under future conditions, it is unlikely that drinking water wells will be installed on site for the future power generating facility because of the availability of municipal drinking water sources. Further, first groundwater underlying the site will not likely be used as a potable source because a minimum sanitary seal of 20-foot thickness is required. Thus, potential exposures associated with groundwater as a drinking water source under future conditions is incomplete.

The overall approach of the updated HHRA will be consistent with the Reasonable Maximum Exposure (RME) approach as defined by U.S. EPA (1989). The RME approach is defined as the “highest exposure that is reasonably expected to occur at the site.” Hypothetical exposure point concentrations (EPCs) for each COPC in each media will be estimated based on the 95 percent upper confidence limit (95% UCL) or maximum concentration detected, whichever was lower (U.S. EPA, 1992b and 2002a). For the HHRA, U.S. EPA’s ProUCL software version 4.0 (U.S. EPA, 2007) will be used to develop 95% UCLs. Given that groundwater is present between 6 and 11 feet bgs and subsurface soils could be redistributed at the land surface during excavation and grading, only soil data collected from the top 10 feet will be considered for the HHRA.

The “Annual Average Daily Dose” (AADD) or “Lifetime Average Daily Dose” (LADD) will be used to quantify hypothetical potential exposure in the HHRA. The AADD is used as a standard measure for characterizing long-term noncarcinogenic effects. The LADD, which addresses hypothetical exposures that may occur over varying durations from a single event to an average 70-year human lifetime, is used to estimate potential carcinogenic risk. Equations for calculating AADD and LADD published by the U.S. EPA will be used (U.S. EPA, 1989).

Hypothetical potential exposure assumptions used in the daily intake calculations will be based on information contained in U.S. EPA and Cal/EPA DTSC risk guidance, site-specific information, and professional judgment, and will represent upper-bound conservative values under a RME scenario. Tables 12 through 16 present the proposed hypothetical potential exposure parameters and values for each receptor for which quantitative risk calculations will be performed.

8.3 TOXICITY ASSESSMENT

Toxicity criteria to be used in the updated HHRA will be presented in tabular summaries and will be selected according to the following hierarchy:

1. Office of Environmental Health Hazard Assessment (OEHHA), 2009a, Cal/EPA Toxicity Criteria Database, OEHHA, on-line database;
2. U.S. EPA, 2009a Integrated Risk Information System (IRIS) on-line database;
3. U.S. EPA, 2009b, Regional Screening Levels; and
4. U.S. EPA, 2004, Region 9 Preliminary Remediation Goals (PRGs).

TPH measurements, such as extractables (e.g., diesel [TPHd] and motor oil [TPHmo]), represent mixtures of chemicals that, because of their highly variable composition, have typically not had descriptive health criteria. Therefore, the toxicity of these mixtures has been historically described by the aggregate toxicity of key individual chemicals in the mixture, such as benzene, toluene, ethylbenzene, and xylene (collectively known as BTEX) and PAHs. Although the DTSC still recommends the use of BTEX to represent the toxicity of the C_6-C_8 aromatic fraction, DTSC has provided interim guidance which provides a methodology to quantitatively include TPH measurements in a risk evaluation (DTSC, 2009a). This interim guidance will be followed in the HHRA to assess potential health effects associated with TPH.

Specifically, the guidance provides recommended reference doses for TPH fractions based on the range of carbon atoms in the mixture and the structure of the carbon chain (aliphatic or aromatic). The fractions described are C_5-C_8 aliphatic, C_6-C_8 aromatic, C_9-C_{18} aliphatic, C_9-C_{16} aromatic, C_{17}-C_{32} aliphatic and aromatic. The DTSC recommends carbon ranges loosely corresponding to TPH quantified as gasoline, diesel, and motor oil. The TEH data from the 1997 investigation at the project area was reported in the C_9-C_{40} carbon range. Since aliphatic and aromatic fractions are not available for the historical data, the ratio of the speciated fractionated TPH and the aggregate TPH from the proposed sampling and analysis dataset will be applied to historical data; the default assumption that 50 percent of the TPH quantified as diesel and motor oil is aliphatic and the remaining 50 percent is aromatic will not be made unless sufficient fractionated and aggregated TPH are not generated from this proposed sampling program (i.e., low to no TPH detections). In addition, consistent with the guidance, because naphthalene and methylnaphthalenes will be analyzed individually at the project area as part of TPH fractionation, the less conservative oral reference dose (RfD) of 0.03 mg/kg-day will be used to quantify the health impacts from the measured aromatic fraction (C_{11}-C_{16}) that overlaps with the DTSC fraction (C_9-C_{16}).

If lead is identified as a COPC, the U.S. EPA's Adult Lead Methodology (ALM; U.S. EPA, 2005) model and Cal-EPA's model, LeadSpread, will be used (DTSC, 2009b) to evaluate hypothetical potential health concerns associated with lead exposure.

Per OEHHA (2009b), LeadSpread is currently under revision to ensure that the model is adequately protective of women of child-bearing age. Therefore, the most recent version of U.S. EPA's ALM model (U.S. EPA, 2005) will be modified with OEHHA input parameters (OEHHA, 2009b) and used to evaluate potential health risks to adults of childbearing ages. In the ALM model, exposure to lead is evaluated in two steps. The first step is designed to estimate the blood-lead concentration in adults based on a given exposure to lead in soil using a biokinetic slope factor, which relates increases in typical adult blood lead concentrations to average daily lead exposure. The second step of the model is designed to estimate the corresponding blood-lead concentration in a fetus assuming the adult is a pregnant female. The average blood-lead level in an adult is multiplied by the proportion of fetal blood-lead concentration at birth based on maternal blood-lead concentration, and an estimated value of the individual geometric standard deviation among adults.

8.4 RISK CHARACTERIZATION AND UNCERTAINTIES

Finally, the results of the COPC analysis, hypothetical exposure assessment, and toxicity evaluation will be integrated to estimate the possible likelihood of an adverse health effect for the hypothetical receptors identified for the assessment. Potential noncarcinogenic health effects will be expressed in terms of a "hazard quotient," which is equal to the estimated level of exposure (or dose) divided by the RfD. As a screening approach, hazard quotients will be conservatively summed for all COPCs to calculate a hazard index assuming they all affect the same health effect endpoint. A hazard quotient or hazard index less than or equal to one (1) indicates that the predicted potential exposure should not result in noncarcinogenic health effects. Theoretical excess lifetime cancer risks will be calculated by multiplying the estimated level of exposure (dose) over a lifetime by the chemical-specific cancer slope factor. As with the hazard index, the theoretical estimated cancer risks for each chemical and potential exposure pathway will be summed to estimate the total excess lifetime cancer risk for the hypothetically exposed individual. In discussing the results of the HHRA, theoretical carcinogenic risks will be compared with the acceptable risk range of 1×10^{-6} to 1×10^{-4}. The estimates of theoretical risk and hazard will be presented and summarized in tables.

The final component will be an assessment of the uncertainty in the estimated noncarcinogenic hazard indexes and carcinogenic risks. Uncertainty is inherent in many aspects of the risk assessment process, and generally arises from a lack of knowledge of (1) project area conditions, (2) toxicity and dose-response of the COPCs, and/or (3) the extent to which an individual may be exposed (if at all) to chemicals. This lack of knowledge means that assumptions must be made based on information presented in the scientific literature or professional judgment. Although some assumptions have significant scientific basis, many do not. The assumptions that introduce the greatest amount of uncertainty and their effects on the findings of the HHRA will be discussed. The discussion of uncertainties and limitations of the risk assessment will be qualitative in nature, reflecting the difficulty in quantifying the uncertainty in specific assumptions. In general, assumptions will be selected in a manner that purposefully biases the process toward health protection.

8.5 PROPOSED REMEDIATION CLEANUP GOALS

If the results of the updated HHRA indicate that chemicals detected in soil and groundwater other than PAHs pose a potential risk to current and future populations, remediation cleanup goals will be developed to protect public health in support of the Corrective Measures Proposal.

9.0 REPORT

Following completion of field activities, sample analysis, validation of the analytical laboratory results, and analysis of the data, AMEC will prepare a report summarizing the sampling methods and results and presenting the results of the updated HHRA. The report will contain:

- a description of the MLGS background information and previous project area investigations, field activities, analytical results, updated HHRA results, and conclusions;
- a project area map depicting sampling locations;
- data tables summarizing the soil and groundwater data, including both historical data and data obtained during this investigation;
- analytical laboratory reports and chain-of-custody forms;
- the EPCs for all COPCs found on the MLGS project area;
- a list of all potential theoretical exposure pathways and assumptions for all hypothetical receptors assessed;
- a table that provides all potential exposure input values for each hypothetical receptor assessed;

- a table that includes all physical parameters and toxicity values for all COPCs assessed;
- a table showing the results for theoretical cancer risk, acute hazard index, and chronic hazard index by COPCs and by potential exposure pathway; and
- proposed remediation cleanup goals for risk-driving COPCs in support of the Corrective Measures Proposal.

10.0 SCHEDULE

We anticipate that the field activities will begin on May 10, 2010, after receiving DTSC approval of this work plan, depending on contractor availability, and will require approximately 5 days to complete. Based on this planned schedule, we expect to submit the draft investigation report along with the HHRA to DTSC in late June/early July 2010.

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TABLES

TABLE 1

SOIL ANALYTICAL RESULTS - METALS [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Fluor Daniel GTI 1997 Phase II Investigation [2]																				
CB5-003	9/29/1997	0.5	<6.0	1.2	44	<0.50	<2.0	15	5.3	6.9	---	3.3	<0.050	<10	17	<1.0	<2.0	<1.0	23	21
		4.5	<6.0	1.7	28	<0.50	<2.0	14	(4.6)	4.5	---	1.7	<0.050	<10	16	<1.0	<2.0	<1.0	22	19
CB5-004	9/29/1997	0.5	<6.0	2.8	36	<0.50	<2.0	13	(4.3)	5.7	---	3.2	<0.050	<10	14	<1.0	<2.0	<1.0	20	18
		4.5	<6.0	1.3	29	<0.50	<2.0	12	(3.8)	5.0	---	1.4	<0.050	<10	17	<1.0	<2.0	<1.0	17	19
		4.5 (dup)	<6.0	1.4	27	<0.50	<2.0	14	(3.9)	5.2	---	1.3	<0.050	<10	17	<1.0	<2.0	<1.0	19	16
CB5-005	9/29/1997	0.5	<6.0	6.9	49	<0.50	<2.0	630	17	51	---	30	<0.050	<10	400	<1.0	<2.0	<1.0	39	79
		4.5	<6.0	1.5	35	<0.50	<2.0	26	(4.8)	5.9	---	2.3	<0.050	<10	22	<1.0	<2.0	<1.0	19	20
CB5-006	9/29/1997	0.5	<6.0	1.1	41	<0.50	<2.0	13	(4.8)	5.8	---	1.6	<0.050	<10	15	<1.0	<2.0	<1.0	19	17
		4.5	<6.0	0.83	37	<0.50	<2.0	13	(4.2)	5.0	---	1.3	<0.050	<10	16	<1.0	<2.0	<1.0	18	16
CB5-007	9/25/1997	0.5	<6.0	2.2	130	<0.50	<2.0	26	9.3	15	---	2.7	(0.032)	<10	41	<1.0	<2.0	<1.0	37	33
		5.5	<6.0	1.0	33	<0.50	<2.0	12	(4.3)	4.8	---	1.2	<0.050	<10	15	<1.0	<2.0	<1.0	19	17
CB5-014	9/29/1997	1.25	<6.0	2.2	72	<0.50	<2.0	20	6.0	9.0	---	2.2	<0.050	<10	20	<1.0	<2.0	<1.0	28	21
		4.5	<6.0	1.5	32	<0.50	<2.0	12	(4.3)	4.9	---	1.5	<0.050	<10	18	<1.0	<2.0	<1.0	20	17
CB5-015	9/29/1997	0.5	<6.0	1.5	52	<0.50	<2.0	16	5.2	7.2	---	1.9	<0.050	<10	19	<1.0	<2.0	<1.0	24	21
		4.5	<6.0	1.6	45	<0.50	<2.0	14	(4.6)	5.8	---	1.9	<0.050	<10	17	<1.0	<2.0	<1.0	21	18
CB5-016	9/29/1997	0.5	<6.0	4.0	66	<0.50	<2.0	7.7	(3.2)	6.0	---	5.6	<0.050	<10	8.9	<1.0	<2.0	<1.0	32	16
		4.5	<6.0	0.99	44	<0.50	<2.0	10	(4.2)	5.3	---	1.4	<0.050	<10	12	<1.0	<2.0	<1.0	16	17
CB5-017	9/29/1997	0.5	<6.0	3.6	130	<0.50	<2.0	32	8.4	16	---	5.2	<0.050	<10	37	<1.0	<2.0	<1.0	33	43
		4.5	<6.0	1.5	41	<0.50	<2.0	12	(3.7)	6.2	---	2.1	<0.050	<10	12	<1.0	<2.0	<1.0	19	21
CB5-018	9/23/1997	0.5	<6.0	1.8	32	<0.50	<2.0	11	(3.8)	5.0	---	2.4	(0.011)	<10	14	<1.0	<2.0	<1.0	18	20
		5.5	<6.0	0.93	31	<0.50	<2.0	9.7	(3.5)	5.0	---	4.5	<0.050	<10	12	<1.0	<2.0	<1.0	14	23
CB5-025	9/29/1997	0.5	<6.0	1.9	84	<0.50	<2.0	31	6.4	9.7	---	2.3	<0.050	<10	26	<1.0	<2.0	<1.0	27	22
		4.5	<6.0	1.3	29	<0.50	<2.0	10	(2.5)	4.5	---	2.2	<0.050	<10	11	<1.0	<2.0	<1.0	16	20
CB5-026	9/29/1997	0.5	<6.0	5.5	170	<0.50	<2.0	36	9.6	23	---	6.5	0.072	<10	43	<1.0	<2.0	<1.0	45	50
		4.5	<6.0	1.4	47	<0.50	<2.0	15	(4.6)	5.0	---	1.8	<0.050	<10	17	<1.0	<2.0	<1.0	23	17
CB5-027	9/25/1997	0.5	<6.0	2.5	140	<0.50	<2.0	29	7.6	14	---	5.7	(0.047)	<10	33	<1.0	<2.0	<1.0	32	33
		5.5	<6.0	1.1	40	<0.50	<2.0	12	(3.6)	5.5	---	4.2	<0.050	<10	11	<1.0	<2.0	<1.0	20	<21
C85-028	9/25/1997	0.5	<6.0	2.6	83	<0.50	<2.0	22	7.2	13	---	8.0	<0.050	<10	5.6	<1.0	<2.0	<1.0	31	31
		5.5	<6.0	1.1	29	<0.50	<2.0	9.2	(3.2)	4.3	---	1.4	<0.050	<10	13	<1.0	<2.0	<1.0	14	<17
CB5-029	9/23/1997	0.5	<6.0	1.3	120	<0.50	<2.0	8.1	11	31	---	1.0	(0.02)	<10	6.6	<1.0	<2.0	<1.0	62	42
		5.5	<6.0	1.2	34	<0.50	<2.0	11	(3.5)	4.7	---	2.9	<0.050	<10	10	<1.0	<2.0	<1.0	16	19
CB5-036	9/25/1997	0.5	<6.0	3.0	120	<0.50	<2.0	32	7.2	14	---	4.7	(0.046)	<10	29	<1.0	<2.0	<1.0	34	26
		5.5	<6.0	1.3	28	<0.50	<2.0	8.8	(3.3)	4.2	---	2.0	<0.050	<10	12	<1.0	<2.0	<1.0	13	<15
CB5-037	9/25/1997	0.5	<6.0	1.7	82	<0.50	<2.0	32	7.5	21	---	20	0.13	<10	25	<1.0	<2.0	<1.0	31	46
		5.5	<6.0	1.2	27	<0.50	<2.0	11	(3.3)	4.5	---	4.3	<0.050	<10	11	<1.0	<2.0	<1.0	16	<17
CB5-038	9/25/1997	0.5	<6.0	1.2	43	<0.50	<2.0	15	(4.0)	5.6	---	2.3	<0.050	<10	16	<1.0	<2.0	<1.0	17	<17
		5.5	<6.0	1.2	36	<0.50	<2.0	12	(3.8)	5.0	---	3.0	<0.050	<10	10	<1.0	<2.0	<1.0	20	<18
CB5-039	9/25/1997	0.5	<6.0	1.3	26	<0.50	<2.0	8.9	(3.0)	3.8	---	1.7	(0.03)	<10	11	<1.0	<2.0	<1.0	12	<13
		5.5	<6.0	1.0	39	<0.50	<2.0	13	(4.4)	5.6	---	1.9	<0.050	<10	12	<1.0	<2.0	<1.0	21	<19

TABLE 1

SOIL ANALYTICAL RESULTS - METALS [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
CB5-040	9/22/1997	0.5	<6.0	**1.1**	**34**	<0.50	<2.0	**11**	**(3.8)**	**6.4**	---	**3.4**	<0.050	<10	**15**	<1.0	<2.0	<1.0	**16**	**20**
		4.5	<6.0	**2.6**	**394**	<0.50	<2.0	**12**	**(4.6)**	**5.3**	---	**4.8**	<0.050	<10	**17**	**1.6**	<2.0	**1.5**	**16**	**19**
		9.5	<6.0	**0.92**	**36**	<0.50	<2.0	**12**	**(4.7)**	**4.7**	---	**1.4**	**(0.017)**	<10	**16**	<1.0	<2.0	<1.0	**19**	**17**
CB5-051	9/25/1997	0.5	<6.0	**3.8**	**170**	<0.50	<2.0	**37**	**9.6**	**18**	---	**5.2**	**(0.044)**	<10	**35**	<1.0	<2.0	<1.0	**34**	**32**
		4.5	<6.0	**1.3**	**32**	<0.50	<2.0	**11**	**(3.6)**	**5.4**	---	**1.5**	**(0.034)**	<10	**14**	<1.0	<2.0	<1.0	**17**	**16**
CB5-052	9/25/1997	1.5	<6.0	**1.7**	**82**	<0.50	<2.0	**26**	**12**	**63**	---	**3.7**	**0.14**	<10	**23**	<1.0	<2.0	<1.0	**42**	**23**
		5.5	<6.0	**1.2**	**34**	<0.50	<2.0	**14**	**(4.2)**	**6.0**	---	**1.9**	<0.050	<10	**16**	<1.0	<2.0	<1.0	**21**	**20**
CB5-053	9/25/1997	0.5	<6.0	**1.7**	**62**	<0.50	<2.0	**26**	**5.5**	**8.3**	---	**3.2**	<0.050	<10	**24**	<1.0	<2.0	<1.0	**24**	**25**
		5.5	<6.0	**1.3**	**34**	<0.50	<2.0	**10**	**(4.1)**	**4.8**	---	**1.3**	**(0.031)**	<10	**10.0**	<1.0	<2.0	<1.0	**17**	**14**
CB5-054	9/25/1997	0.5	<6.0	**1.7**	**99**	<0.50	<2.0	**28**	**10**	**26**	---	**2.6**	**0.41**	<10	**32**	<1.0	<2.0	<1.0	**43**	**36**
		5.5	<6.0	**1.2**	**43**	<0.50	<2.0	**12**	**(4.2)**	**5.2**	---	**2.0**	**0.28**	<10	**14**	<1.0	<2.0	<1.0	**16**	**18**
CB5-055	9/22/1997	0.5	<6.0	**1.3**	**39**	<0.50	<2.0	**31**	**9.7**	**17**	---	**6.4**	**(0.030)**	<10	**110**	<1.0	<2.0	<1.0	**21**	**20**
		4.5	<6.0	**1.0**	**43**	<0.50	<2.0	**14**	**5.3**	**7.7**	---	**1.7**	**(0.011)**	<10	**22**	<1.0	<2.0	<1.0	**17**	**20**
		9.5	<6.0	**0.84**	**26**	<0.50	<2.0	**14**	**(4.4)**	**4.7**	---	**1.6**	<0.050	<10	**16**	<1.0	<2.0	<1.0	**22**	**17**
CB5-066	12/3/1997	0.5	<6.0	**1.2**	**34**	<0.50	<2.0	**12**	**(4.2)**	**5.6**	**6700**	**2.6**	<0.050	<10	**15**	<1.0	<2.0	<1.0	**16**	**17**
		4.5	<6.0	**2.5**	**49**	<0.50	<2.0	**15**	**5.7**	**8.1**	**9600**	**2.0**	<0.050	<10	**23**	<1.0	<2.0	<1.0	**26**	**21**
		9.5	<6.0	**1.7**	**34**	<0.50	<2.0	**13**	**(4.5)**	**5.5**	**7100**	**1.5**	<0.050	<10	**18**	<1.0	<2.0	<1.0	**18**	**16**
		14.5	<6.0	**3.3**	**59**	<0.50	<2.0	**19**	**7.9**	**8.7**	**11000**	**2.5**	<0.050	<10	**33**	<1.0	<2.0	<1.0	**27**	**28**
AMEC Geomatrix 2009 Investigation [3]																				
SB-5	12/14/09	1.0	<0.4	**2.4**	**81**	<0.4	<0.4	**17**	**5.2**	**10**	---	**6.6**	<0.04	<0.4	**20**	<0.5	<0.4	<0.4	**26**	**36**
		2.0	<0.4	**1.7**	**59**	<0.4	<0.4	**17**	**4.9**	**8.2**	---	**3**	<0.04	<0.4	**17**	<0.5	<0.4	<0.4	**24**	**22**
SB-6	12/14/09	1.0	<0.4	**2.6**	**76**	<0.4	<0.4	**22**	**6.0**	**13**	---	**15**	<0.04	**0.4**	**23**	<0.5	<0.4	<0.4	**32**	**54**
		2.0	<0.4	**1.2**	**54**	<0.4	<0.4	**16**	**4.6**	**6.9**	---	**2.4**	<0.04	<0.4	**16**	<0.5	<0.4	<0.4	**20**	**19**
SB-7	12/15/09	1.0	<0.4	**3.2**	**59**	<0.4	<0.4	**18**	**4.9**	**10**	---	**14**	<0.04	**0.4**	**22**	<0.5	<0.4	<0.4	**26**	**56**
		2.0	<0.4	**1.3**	**45**	<0.4	<0.4	**13**	**4.2**	**6.5**	---	**2.3**	<0.04	<0.4	**15**	<0.5	<0.4	<0.4	**19**	**17**
SB-8	12/15/09	0.5	<0.4	**1.8**	**35**	<0.4	<0.4	**13**	**3.8**	**6.2**	---	**2.9**	<0.04	**0.5**	**16**	<0.5	<0.4	<0.4	**19**	**17**
SB-12	12/14/09	0.5	<0.4	**2.5**	**160**	<0.4	<0.4	**42**	**11**	**22**	---	**3.3**	**0.05**	**0.7**	**43**	<0.5	<0.4	<0.4	**40**	**30**
SB-13	12/14/09	0.5	<0.4	**2.4**	**180**	<0.4	<0.4	**41**	**9.4**	**20**	---	**4.3**	<0.04	<0.4	**36**	<0.5	<0.4	<0.4	**39**	**28**
SB-14	12/14/09	1.0	<0.4	**1.7**	**75**	<0.4	<0.4	**27**	**12**	**37**	---	**5.3**	**0.24**	<0.4	**28**	<0.5	<0.4	<0.4	**46**	**38**
SB-15	12/14/09	0.5	<0.4	**0.5**	**15**	<0.4	<0.4	**59**	**16**	**80**	---	**4**	**0.29**	**0.4**	**18**	<0.5	<0.4	<0.4	**95**	**17**

Notes

1. Detected concentrations are shown in bold.
2. Samples collected by Fluor Daniel GTI in 1997 and analyzed for metals using EPA Method 6000/7000 series. Analytical results were complied from data tables in Fluor Daniel GTI's June 1998 Phase II Environmental Site Assessment report; original laboratory data sheets were not available for review.
3. Samples collected by AMEC Geomatrix in 2009 and analyzed for Title 22 metals using EPA Method 6020/7471A.

Abbreviations

-- = not analyzed
( ) = Detected concentration is less than reporting limit
< = Constituent not detected above indicated reporting limit
bgs = below ground surface
dup = duplicate sample results
EPA = U.S. Environmental Protection Agency

TABLE 2

DETECTIONS OF METALS IN SOIL SAMPLES [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Concentrations reported in milligrams per kilogram (mg/kg)

Analyte	Number of Samples	Number of Detections	Minimum Detected Concentration	Maximum Detected Concentration
Antimony	68	0	NA	NA
Arsenic	68	60	0.5	6.9
Barium	68	60	15	394
Berryllium	68	0	NA	NA
Cadmium	68	0	NA	NA
Chromium	68	68	7.7	630
Cobalt	68	68	(2.5)	17
Copper	68	68	3.8	80
Iron	4	4	6700	11000
Lead	68	68	1.0	30
Mercury	68	20	(0.011)	0.41
Molybdenum	68	62	0.4	0.7
Nickel	68	68	5.6	400
Selenium	68	1	1.6	1.6
Silver	68	0	NA	NA
Thallium	68	1	1.5	1.5
Vanadium	68	68	12	95
Zinc	68	60	14	79

Notes

1. The metals data is a summary of both the Fluor Daniel GTI 1997 investigation and AMEC 2009 investigation.

Abbreviations

( ) = Detected concentration is less than reporting limit
NA = not applicable

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS, VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons: TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})	VOCs[2]	PCBs[2]
Fluor Daniel GTI 1997 Phase II Investigation [3]											
CB4-068	10/8/1997	0.5	**37**	--	--	--	--	--	--	--	--
		4.5	**1.7**	--	--	--	--	--	--	--	--
		7.5	<1.0	--	--	--	--	--	--	--	--
CB4-069	10/8/1997	0.5	**10**	--	--	--	--	--	--	--	--
		4.5	<1.0	--	--	--	--	--	--	--	--
		7.5	<1.0	--	--	--	--	--	--	--	--
CB4-070	10/1/1997	0.5	<1.1	--	--	--	--	--	--	--	--
		4.5	<1.5	--	--	--	--	--	--	--	--
CB4-071	10/1/1997	0.5	<1.4	--	--	--	--	--	--	--	--
		4.5	<1.5	--	--	--	--	--	--	--	--
CB4-072	10/8/1997	0.5	<6.1	--	--	--	--	--	--	--	--
		4.5	<1.5	--	--	--	--	--	--	--	--
		9.5	**(0.88)**	--	--	--	--	--	--	--	--
CB4-073	10/1/1997	0.5	<1.3	--	--	--	--	--	--	--	--
		4.5	<2.2	--	--	--	--	--	--	--	--
CB4-074	10/1/1997	0.5	**20**	--	--	--	--	--	--	--	--
		4.5	<2.2	--	--	--	--	--	--	--	--
CB4-075	10/7/1997	0.5	<1.2	--	--	--	--	--	--	--	--
		0.5	**(0.96)**	--	--	--	--	--	--	--	--
	10/8/1997	3.5	**(0.79)**	--	--	--	--	--	--	--	--
CB4-076	10/8/1997	0.5	**120**	--	--	--	--	--	--	--	--
		2.5	<1.0	--	--	--	--	--	--	--	--
CB4-077	10/8/1997	0.5	**51**	--	--	--	--	--	--	--	--
		4.5	<6.4	--	--	--	--	--	--	--	--
		9.5	<1.8	--	--	--	--	--	--	--	--

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS, VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})	VOCs[2]	PCBs[2]
CB4-078	9/29/1997	0.5	**68**	--	--	--	--	--	--	--	--
		4.5	**4.8**	--	--	--	--	--	--	--	--
CB4-079	10/7/1997	0.5	**110**	--	--	--	--	--	--	--	--
		3.5	<1.2	--	--	--	--	--	--	--	--
CB4-080	10/7/1997	0.5	**160**	--	--	--	--	--	--	--	--
		3.5	<1.5	--	--	--	--	--	--	--	--
CB4-081	9/30/1997	0.5	**18**	--	--	--	--	--	--	--	--
		5.5	**(0.97)**	--	--	--	--	--	--	--	--
CB4-082	10/8/1997	0.5	<30	--	--	--	--	--	--	--	--
		0.5 (dup)	<12	--	--	--	--	--	--	--	--
		4.5	<1.2	--	--	--	--	--	--	--	--
		9.5	<1.5	--	--	--	--	--	--	--	--
CB4-083	9/30/1997	0.5	**5.0**	--	--	--	--	--	--	--	--
		4.5	<2.2	--	--	--	--	--	--	--	--
CB4-084	9/30/1997	0.5	<1.8	--	--	--	--	--	--	--	--
		4.5	<2.0	--	--	--	--	--	--	--	--
CB4-085	9/30/1997	0.5	**3.8**	--	--	--	--	--	--	--	--
		4.5	**(0.68)**	--	--	--	--	--	--	--	--
CB4-086	9/30/1997	0.5	**25**	--	--	--	--	--	--	--	--
		4.5	**1.3**	--	--	--	--	--	--	--	--
CB4-087	9/30/1997	0.5	**18**	--	--	--	--	--	--	--	--
		4.5	**1.5**	--	--	--	--	--	--	--	--
CB4-088	9/30/1997	0.5	**1.7**	--	--	--	--	--	--	--	--
		4.5	**5.4**	--	--	--	--	--	--	--	--
CB4-089	10/8/1997	0.5	**250**	--	--	--	--	--	--	--	--
		4.5	**44**	--	--	--	--	--	--	--	--
		11.5	<1.8	--	--	--	--	--	--	--	--

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS,
VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})	VOCs[2]	PCBs[2]
CB4-090	10/13/1997	0.5	**150**	--	--	--	--	--	--	--	--
		0.5 (dup)	**260**	--	--	--	--	--	--	--	--
		4.5	**3.7**	--	--	--	--	--	--	--	--
		9.5	<2.3	--	--	--	--	--	--	--	--
		13.5	<2.0	--	--	--	--	--	--	--	--
CB4-091	9/30/1997	0.5	<2.2	--	--	--	--	--	--	--	--
		4.5	<1.5	--	--	--	--	--	--	--	--
		10.75	<1.2	--	--	--	--	--	--	--	--
		15.75	**6.2**	--	--	--	--	--	--	--	--
CB4-092	9/30/1997	0.5	**38**	--	--	--	--	--	--	--	--
		4.5	<2.8	--	--	--	--	--	--	--	--
		4.5 (dup)	**(0.66)**	--	--	--	--	--	--	--	--
		10.75	**(0.70)**	--	--	--	--	--	--	--	--
		15.75	**(0.59)**	--	--	--	--	--	--	--	--
CB4-093	10/1/1997	0.5	**120**	--	--	--	--	--	--	--	--
		4.5	**(0.89)**	--	--	--	--	--	--	--	--
		10.75	**(0.72)**	--	--	--	--	--	--	--	--
		15.75	<1.0	--	--	--	--	--	--	--	--
CB4-094	10/1/1997	0.5	**16**	--	--	--	--	--	--	--	--
		4.5	<1.7	--	--	--	--	--	--	--	--
		10.75	<1.2	--	--	--	--	--	--	--	--
		15.75	<1.0	--	--	--	--	--	--	--	--
CB4-095	9/30/1997	0.5	**72**	--	--	--	--	--	--	--	--
		4.5	<1.4	--	--	--	--	--	--	--	--
		10.75	<1.2	--	--	--	--	--	--	--	--
		15.75	<1.1	--	--	--	--	--	--	--	--

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS,
VOCs, and PCBs[1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons: TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})	VOCs[2]	PCBs[2]
CB4-096	9/30/1997	0.5	**20**	--	--	--	--	--	--	--	--
		8.5	**(0.67)**	--	--	--	--	--	--	--	--
		13.75	**5.0**	--	--	--	--	--	--	--	--
		17.75	<2.6	--	--	--	--	--	--	--	--
CB4-097	10/1/1997	0.5	**24**	--	--	--	--	--	--	--	--
		4.5	**3.7**	--	--	--	--	--	--	--	--
		10.75	**(0.75)**	--	--	--	--	--	--	--	--
		15.75	**(0.87)**	--	--	--	--	--	--	--	--
CB4-098	10/1/1997	0.5	**60**	--	--	--	--	--	--	--	--
		4.5	<4.8	--	--	--	--	--	--	--	--
		10.75	<2.0	--	--	--	--	--	--	--	--
		15.75	<1.1	--	--	--	--	--	--	--	--
		15.75 (dup)	<1.1								
CB4-099	10/8/1997	0.5	**16**	--	--	--	--	--	--	--	--
	10/14/1997	0.5	**77**	--	--	--	--	--	--	--	--
		0.5 (dup)	**100**	--	--	--	--	--	--	--	--
		4.5	**87**	--	--	--	--	--	--	--	--
CB5-003	9/29/1997	0.5	**12**	--	--	--	--	--	--	All ND	All ND
		4.5	**5.1**	--	--	--	--	--	--	All ND	All ND
CB5-004	9/29/1997	0.5	**3.4**	--	--	--	--	--	--	**Xylene (Mixed Isomers) (0.0021)**	All ND
		4.5	**2.3**	--	--	--	--	--	--	All ND	All ND
		4.5 (dup)	**2.0**	--	--	--	--	--	--	All ND	All ND
CB5-005	9/29/1997	0.5	**590**	--	--	--	--	--	--	All ND	All ND
		4.5	**6.5**	--	--	--	--	--	--	All ND	All ND
CB5-006	9/29/1997	0.5	**140**	--	--	--	--	--	--	All ND	All ND
		4.5	**13**	--	--	--	--	--	--	All ND	All ND

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS, VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})	VOCs[2]	PCBs[2]
CB5-007	9/25/1997	0.5	**1900**[4]	--	--	--	--	--	--	All ND	All ND
		5.5	**(0.76)**	--	--	--	--	--	--	All ND	All ND
CB5-014	9/29/1997	1.25	**14**	--	--	--	--	--	--	**Methylene Chloride 0.015**	--
		4.5	**2.4**	--	--	--	--	--	--	**Methylene Chloride 0.018**	--
CB5-015	9/29/1997	0.5	<1.3	--	--	--	--	--	--	**Methylene Chloride (0.0058)**	--
		4.5	<1.7	--	--	--	--	--	--	**Methylene Chloride (0.0067)**	--
CB5-016	9/29/1997	0.5	**180**	--	--	--	--	--	--	All ND	--
		4.5	**3.5**	--	--	--	--	--	--	All ND	--
CB5-017	9/29/1997	0.5	**700**	--	--	--	--	--	--	All ND	--
		4.5	**6.6**	--	--	--	--	--	--	All ND	All ND
CB5-018	9/23/1997	0.5	<2.1	--	--	--	--	--	--	All ND	--
		5.5	**10**	--	--	--	--	--	--	**Methylene Chloride (0.0033)**	--
CB5-025	9/29/1997	0.5	**33**	--	--	--	--	--	--	**Methylene Chloride 0.013**	--
		4.5	**5.3**	--	--	--	--	--	--	**Methylene Chloride 0.013**	--
CB5-026	9/29/1997	0.5	**370**	--	--	--	--	--	--	**Methylene Chloride 0.019**	--
		4.5	**2.1**	--	--	--	--	--	--	**Methylene Chloride 0.012**	--
CB5-027	9/25/1997	0.5	**420**[4]	--	--	--	--	--	--	All ND	--
		5.5	<1.2	--	--	--	--	--	--	All ND	--

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS, VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons							VOCs[2]	PCBs[2]
			TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})		
CB5-028	9/25/1997	0.5	**140[4]**	--	--	--	--	--	--	All ND	--
		5.5	<2.8	--	--	--	--	--	--	**Methylene Chloride (0.0054)**	--
CB5-029	9/23/1997	0.5	**45**	--	--	--	--	--	--	All ND	--
		5.5	**7.1**	--	--	--	--	--	--	All ND	--
CB5-036	9/25/1997	0.5	**110[4]**	--	--	--	--	--	--	All ND	--
		5.5	<2.3	--	--	--	--	--	--	All ND	--
CB5-037	9/25/1997	0.5	**110[4]**	--	--	--	--	--	--	All ND	--
		5.5	<1.9	--	--	--	--	--	--	All ND	--
CB5-038	9/25/1997	0.5	**81[4]**	--	--	--	--	--	--	All ND	--
		5.5	<1.3	--	--	--	--	--	--	All ND	--
CB5-039	9/25/1997	0.5	<2.2	--	--	--	--	--	--	All ND	--
		5.5	**8.2[4]**	--	--	--	--	--	--	All ND	--
CB5-040	9/22/1997	0.5	**4.4**	--	--	--	--	--	--	**Methylene Chloride (0.0071)**	--
		4.5	**1.4**	--	--	--	--	--	--	**Methylene Chloride (0.0095)**	--
		9.5	<1.0	--	--	--	--	--	--	**Methylene Chloride (0.0087)**	--

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS, VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons: TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})	VOCs[2]	PCBs[2]
CB5-051	9/25/1997	0.5	**140**	--	--	--	--	--	--	**Methylene Chloride 0.016 1,2,4-Trimethylbenzene 0.0064 p-Isopropyltoluene (0.0028) 1,3,5-Trimethylbenzene 0.0053**	--
		4.5	**8.9**	--	--	--	--	--	--	**Methylene Chloride 0.011**	--
CB5-052	9/25/1997	1.5	<1.7	--	--	--	--	--	--	**Methylene Chloride (0.0096)**	--
		5.5	**4.7**	--	--	--	--	--	--	**Methylene Chloride (0.0094)**	--
CB5-053	9/25/1997	0.5	**150**	--	--	--	--	--	--	**Methylene Chloride (0.0096)**	--
		5.5	<1.9	--	--	--	--	--	--	All ND	--
CB5-054	9/25/1997	0.5	**180[4]**	--	--	--	--	--	--	All ND	--
		5.5	**(0.69)**	--	--	--	--	--	--	All ND	--
CB5-055	9/22/1997	0.5	**280**	--	--	--	--	--	--	**Methylene Chloride 0.012**	--
		4.5	**38**	--	--	--	--	--	--	**Methylene Chloride (0.0043)**	--
		9.5	**7.8**	--	--	--	--	--	--	**Methylene Chloride (0.0096)**	--

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TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS,
VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Petroleum Hydrocarbons							VOCs[2]	PCBs[2]
			TEH	TPHd	TPHmo	Aliphatic HCs (C_9-C_{18})	Aromatic HCs (C_9-C_{16})	Aliphatic HCs (C_{19}-C_{32})	Aromatic HCs (C_{17}-C_{32})		
CB5-066	12/3/1997	0.5	**25**	--	--	--	--	--	--	--	All ND
		4.5	<1.0	--	--	--	--	--	--	--	All ND
		9.5	<1.0	--	--	--	--	--	--	--	All ND
		14.5	<1.0	--	--	--	--	--	--	--	All ND
AMEC Geomatrix 2009 Investigation [5]											
SB-5	12/14/2009	1.0	--	<10	<10	--	--	--	--	All ND	All ND
		2.0	--	<10	<10	--	--	--	--	All ND	All ND
SB-6	12/14/2009	1.0	--	<10	<10	--	--	--	--	All ND	All ND
		2.0	--	<10	<10	--	--	--	--	All ND	All ND
SB-7	12/15/2009	1.0	--	<10	**12**	<10	<10	**22**	**34**	All ND [6]	All ND
		2.0	--	<10	<10	--	--	--	--	All ND	All ND
		3.5	--	<10	<10	--	--	--	--	--	--
SB-8	12/15/2009	0.5	--	<10	<10	--	--	--	--	--	All ND
		1.0	--	<10	<10	--	--	--	--	--	All ND
SB-9	12/14/2009	1.0	--	<10	<10	--	--	--	--	--	All ND
		3.0	--	--	--	--	--	--	--	--	All ND
SB-10	12/14/2009	1.0	--	<10	**24**	--	--	--	--	--	All ND
		3.0	--	--	--	--	--	--	--	--	All ND
SB-11	12/15/2009	1.0	--	<10	**25**	<10	<10	<10	<10	--	All ND
SB-12	12/14/2009	0.5	--	<10	**36**	<10	<10	<10	<10	--	All ND
SB-13	12/14/2009	0.5	--	<10	<10	--	--	--	--	--	All ND
SB-14	12/14/2009	1.0	--	<10	**48**	**160**	**71**	**480**	**540**	--	All ND
SB-15	12/14/2009	0.5	--	<10	**120**	<10	<10	**16**	**20**	--	All ND

TABLE 3

SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS,
VOCs, and PCBs[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Notes

1. Detected concentrations are shown in **bold.**
2. Full list of VOC and PCB analytes are included in Fluor Daniel 1997 Phase II Investigation Report and AMEC 2010 Focused Site Investigation Report and Human Health Risk Assessment. Based on information in Fluor Daniel's 1997 report, methylene chloride was determined to be a laboratory contaminant.
3. Samples collected by Fluor Daniel GTI in 1997 and analyzed for TEH in the range of C_9 to C_{40} using Modified U.S. EPA Method 8015; TPH fractionation by ultrasonic extraction (EPA 3550B), silica gel fractionation (EPA 3630C/TNRCC1006), and GC/MS Method (EPA Method 8270C modified for TEPH) with the aromatic and aliphatic fractions analyzed separately; VOCs using U.S. EPA Method 8260; and PCBs using EPA Method 8081. Analytical results were complied from data tables in Fluor Daniel GTI's June 1998 Phase II Environmental Site Assessment report; original laboratory data sheets were not available for review.
4. Note on Fluor Daniel GTI data table indicates "Duplicate records found; data review required."
5. Samples collected by AMEC Geomatrix in 2009 and analyzed for TPHd (carbon range C_{10} through C_{25}) and TPHmo (carbon range C_{25} through C_{40}) using EPA Method 8015 with silica gel cleanup, VOCs using EPA Method 8260, and PCBs using EPA Method 8081. PCB concentrations were reported on a dry weight basis.
6. Methylene chloride was detected at 0.051mg/kg in the sample; however, the laboratory indicated this is likely due to laboratory contamination. Therefore, methylene chloride is considered to be not detected above 0.051 mg/kg.

Abbreviations

( ) = detected concentration is less than reporting limit
< = constituent not detected above indicated reporting limit
-- = not analyzed
All ND = none of the constituents listed in either the VOC or PCB lists were detected
bgs = below ground surface
dup = duplicate sample result
EPA = U.S. Environmental Protection Agency
HCs = hydrocarbons
PCBs = polychlorinated biphenyls
TEH = total extractable hydrocarbons
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
U = The compond analyzed for was not detected above the reported sample quantitation limit
VOCs = volatile organic compounds

TABLE 4

SOIL ANALYTICAL RESULTS - PAHs [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Acenaph-thene	Acenaph-thylene	Anthra-cene	Benzo-(ghi)-perylene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoran-thene	Benzo(k)-fluoran-thene	Chrysene	Dibenz-(a,h)an-thracene	Fluoran-thene	Fluorene	Indeno-(1,2,3-cd)-pyrene	1-Methylnaph-thalene	2-Methylnaph-thalene	Naphtha-lene	Phenan-threne	Pyrene	B(a)p TEQ[2]
Fluor Daniel GTI 1997 Phase II Investigation [3]																					
CB4-073	10/1/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-074	10/1/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-075	10/7/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		0.5 (dup)	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		3.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-076	10/8/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		2.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-077	10/8/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		9.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-078	9/29/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-079	10/7/1997	0.5	<0.50	<10	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.30	--	--	<0.50	<0.50	<0.50	NC
		3.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-080	10/7/1997	0.5	<0.50	<10	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.30	--	--	<0.50	<0.50	<0.50	NC
		3.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-081	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-082	10/08/1997	0.5	<0.50	<10	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.50	<0.050	<0.50	<0.50	<0.30	--	--	<0.50	<0.50	<0.50	NC
		0.5 (dup)	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<010	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		9.5	<010	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-083	09/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-084	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-085	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-086	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-087	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC

TABLE 4

SOIL ANALYTICAL RESULTS - PAHs [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Acenaph-thene	Acenaph-thylene	Anthra-cene	Benzo-(ghi)-perylene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoran-thene	Benzo(k)-fluoran-thene	Chrysene	Dibenz-(a,h)an-thracene	Fluoran-thene	Fluorene	Indeno-(1,2,3-cd)-pyrene	1-Methylnaph-thalene	2-Methylnaph-thalene	Naphtha-lene	Phenan-threne	Pyrene	B(a)p TEQ[2]
CB4-088	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-089	10/8/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		4.5	<0.50	<10	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.30	--	--	<0.50	<0.50	<0.50	NC
		11.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-090	10/13/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		0.5 (dup)	<5.0	<100	<5.0	<5.0	<5.0	<2.5	<5.0	<5.0	<5,0	<2.5	<5.0	<5.0	<3.0	--	--	<5.0	<5.0	<5.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		9.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		13.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-091	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		10.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-092	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5 (dup)	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		10.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-093	10/1/1997	0.5	<0.20	<4.0	<0.20	**(0.12)**	<0.20	<0.10	<0.20	<0.20	<0.20	**0.11**	<0.20	<0.20	<0.12	--	--	<0.20	<0.20	<0.20	**0.12**
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		10.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-094	10/1/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		10.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-095	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<010	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		10.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0:10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-096	9/30/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		8.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		13.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		17.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC

TABLE 4

SOIL ANALYTICAL RESULTS - PAHs [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Acenaph-thene	Acenaph-thylene	Anthra-cene	Benzo-(ghi)-perylene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoran-thene	Benzo(k)-fluoran-thene	Chrysene	Dibenz-(a,h)an-thracene	Fluoran-thene	Fluorene	Indeno-(1,2,3-cd)-pyrene	1-Methylnaph-thalene	2-Methylnaph-thalene	Naphtha-lene	Phenan-threne	Pyrene	B(a)p TEQ[2]
CB4-097	10/1/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		10.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-098	10/1/1997	0.5	<0.20	<4.0	<0.20	<0.20	<0.20	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.20	<0.12	--	--	<0.20	<0.20	<0.20	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		10.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		15.75 (dup)	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB4-099	10/8/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
	10/14/1997	0.5	<0.50	<10	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.30	--	--	<0.50	<0.50	<0.50	NC
		0.5 (dup)	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.060	--	--	<1.0	<1.0	<1.0	NC
		4.5	<1.0	<20	<1.0	**(0.59)**	**1.1**	**0.71**	**2.3**	**(0.85)**	**3.0**	**2.9**	<1.0	<1.0	**0.74**	**--**	**--**	<1.0	<1.0	<1.0	**2.19**
CB5-003	9/29/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-004	9/29/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5 (dup)	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-005	9/29/1997	0.5	**(9.0)**	<200	<10	<10	<10	**(3.6)**	<10	<10	<10	<5.0	**14**	<10	<6.0	--	--	**(7.0)**	**13**	**(9.5)**	**0.13**
		4.5	<0.10	<2.0	<0.10	<0.10	**(0.072)**	**0.093**	**(0.094)**	<0.10	**(0.089)**	**0.051**	**0.15**	<0.10	**(0.044)**	**--**	**--**	<0.10	<0.10	**0.15**	NC
CB5-006	9/29/1997	0.5	**(1.6)**	<50	<2.5	**(2.3)**	**2.7**	**3.2**	**(1.7)**	<2.5	**(2.4)**	<1.2	**7.5**	<2.5	**2.1**	**--**	**--**	<2.5	**9.0**	**7.6**	**4.1**
		4.5	<0.10	<2.0	<0.10	**0.17**	**(0.061)**	**0.19**	**0.10**	**0.11**	**(0.081)**	<0.050	**(0.094)**	<0.10	<0.060	--	--	<0.10	<0.10	**0.17**	**0.23**
CB5-007	9/25/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-014	9/29/1997	1.25	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-015	9/29/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-016	9/29/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-017	9/29/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.050	<1.0	<1.0	<1.0	**(0.28)**	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-018	9/23/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	**(0.052)**	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-025	9/29/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.050	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC

TABLE 4

SOIL ANALYTICAL RESULTS - PAHs [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Acenaph-thene	Acenaph-thylene	Anthra-cene	Benzo-(ghi)-perylene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoran-thene	Benzo(k)-fluoran-thene	Chrysene	Dibenz-(a,h)an-thracene	Fluoran-thene	Fluorene	Indeno-(1,2,3-cd)-pyrene	1-Methylnaph-thalene	2-Methylnaph-thalene	Naphtha-lene	Phenan-threne	Pyrene	B(a)p TEQ[2]
CB5-026	9/29/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	**(0.26)**	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-027	9/25/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	**(0.70)**	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-028	9/25/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-029	9/23/1997	0.5	<0.20	<4.0	<0.20	<0.20	<0.20	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.20	<0.12	--	--	<0.20	<0.20	<0.20	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.1	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-036	9/25/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-037	9/25/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-038	9/25/1997	0.5	<0.50	<10	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.50	<0.25	<0.50	<0.50	<0.30	--	--	<0.50	<0.50	<0.50	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-039	9/25/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-040	9/22/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		9.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-051	09125/97	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-052	9/25/1997	1.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-053	9/25/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	**(0.45)**	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<010	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-054	9/25/1997	0.5	<1.0	<20	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<1.0	<0.50	<1.0	<1.0	<0.60	--	--	<1.0	<1.0	<1.0	NC
		5.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-055	9/22/1997	0.5	<2.0	<40	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<1.2	--	--	<2.0	<2.0	<2.0	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		9.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
CB5-066	12/3/1997	0.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		4.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		9.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC
		14.5	<0.10	<2.0	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.10	<0.050	<0.10	<0.10	<0.060	--	--	<0.10	<0.10	<0.10	NC

TABLE 4

SOIL ANALYTICAL RESULTS - PAHs [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

Sample Location	Date	Sample Depth (feet bgs)	Acenaph-thene	Acenaph-thylene	Anthra-cene	Benzo-(ghi)-perylene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoran-thene	Benzo(k)-fluoran-thene	Chrysene	Dibenz-(a,h)an-thracene	Fluoran-thene	Fluorene	Indeno-(1,2,3-cd)-pyrene	1-Methylnaph-thalene	2-Methylnaph-thalene	Naphtha-lene	Phenan-threne	Pyrene	B(a)p TEQ[2]
AMEC Geomatrix 2009 Investigation [4]																					
SB-7	12/15/2009	1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2 J**	**0.2 J**	--	--	--	**--**
SB-8	12/15/2009	0.5	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.023	0.016	**0.024**	<0.010	<0.010	<0.010	<0.010	--	--	<0.010	<0.010	<0.010	**0.099**
SB-9	12/14/2009	1.0	<0.010	<0.010	<0.010	**0.018**	**0.023**	**0.022**	**0.015**	**0.019**	**0.026**	<0.010	**0.033**	<0.010	**0.014**	--	--	<0.010	**0.014**	**0.062**	**0.124**
		3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	<0.010	<0.010	<0.010	NC
SB-10	12/14/2009	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	<0.010	<0.010	<0.010	NC
		3.0	<0.500	**4.9**	**2.5**	**2.5**	**27**	**8.6**	**2.5**	**2.3**	**32**	**1.1**	**29**	**0.5**	<0.500	--	--	**0.65**	**5.3**	**62**	**73.75**
SB-11	12/15/2009	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.1	<0.1	<0.010	**<0.010**	**<0.010**	NC
		3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	<0.010	<0.010	**0.01**	NC
SB-12	12/14/2009	0.5	<0.010	<0.010	<0.010	**0.051**	**0.017**	**0.035**	**0.026**	**0.031**	**0.029**	<0.010	**0.021**	<0.010	**0.038**	<0.1	<0.1	<0.010	<0.010	**0.036**	**0.181**
SB-13	12/14/2009	0.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	<0.010	<0.010	<0.010	NC
SB-14	12/14/2009	1.0	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	**0.8 J**	**0.5 J**	<0.030	<0.030	**0.031**	NC
SB-15	12/14/2009	0.5	<0.010	<0.010	<0.010	<0.010	<0.010	**0.018**	**0.011**	<0.010	**0.017**	<0.010	**0.012**	<0.010	<0.010	<0.1	<0.1	<0.010	<0.010	**0.014**	**0.066**

Notes

1. Detected concentrations are shown in **bold.**
2. Benzo(a)pyrene TEQs were calculated for each sample that had at least one carcinogenic PAH detection above laboratory reporting limit. All results for non-detected carcinogenic PAHs were set at half of the detection limit. The equivalent is calculated using TEFs, adjusting the toxicity of the carcinogenic PAHs to the TEQ of benzo(a)pyrene.
3. Samples collected by Fluor Daniel GTI in 1997 and analyzed for PAHs using Modified EPA Method 8310. Analytical results were complied from data tables in Fluor Daniel GTI's June 1998 Phase II Environmental Site Assessment report; original laboratory data sheets were not available for review.
4. Samples collected by AMEC Geomatrix in 2009 and analyzed for PAHs using EPA Method 8270C with selective ion monitoring.

Abbreviations

( ) = detected concentration is less than reporting limit
< = constituent not detected above indicated reporting limit
-- = not analyzed
B(a)p TEQ = benzo(a)pyrene toxic equivalency
bgs = below ground surface
dup = duplicate sample results
EPA = U.S. Environmental Protection Agency
J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample
NC = not calculated; none of the carcinogenic PAHs were detected above laboratory reporting limits
PAHs = polynuclear aromatic hydrocarbons
TEF = toxic equivalency factor

TABLE 5

SOIL ANALYTICAL RESULTS - ASBESTOS

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Units reported in fiber

Sample Location	Date	Sample Depth (feet bgs)	Asbestos
Fluor Daniel GTI 1997 Phase II Investigation [1]			
CB5-005	9/29/1997	4.5	0
CB5-006	9/29/1997	0.5	0
		4.5	0
CB5-014	9/29/1997	1.25	0
		4.5	0
CB5-015	9/29/1997	0.5	0
		4.5	0
CB5-016	9/29/1997	0.5	0
		4.5	0
CB5-017	9/29/1997	0.5	0
CB5-018	9/23/1997	0.5	0
		5.5	0
CB5-025	9/29/1997	0.5	0
		4.5	0
CB5-026	9/29/1997	0.5	0
		4.5	0
CB5-027	9/25/1997	0.5	0
		5.5	0
CB5-028	9/25/1997	0.5	0
		5.5	0
CB5-029	9/23/1997	0.5	0
		5.5	0
CB5-036	9/25/1997	0.5	0
		5.5	0
CB5-037	9/25/1997	0.5	0
		5.5	0
CB5-038	9/25/1997	0.5	0
		5.5	0
CB5-039	9/25/1997	0.5	0
		5.5	0
CB5-040	9/22/1997	0.5	0
		4.5	0
		9.5	0
CB5-051	9/25/1997	0.5	0
		4.5	0
CB5-052	9/25/1997	1.5	0
		5.5	0

TABLE 5

SOIL ANALYTICAL RESULTS - ASBESTOS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Units reported in fiber

Sample Location	Date	Sample Depth (feet bgs)	Asbestos
CB5-053	9/25/1997	0.5	0
		5.5	0
CB5-054	9/25/1997	0.5	0
		5.5	0
CB5-055	9/22/1997	0.5	0
		4.5	0
		9.5	0

Note
1. Samples collected by Fluor Daniel GTI in 1997 and analyzed for asbestos using NIOSH Method 7400. Analytical results were complied from data tables in Fluor Daniel GTI's June 1998 Phase II Environmental Site Assessment report; original laboratory data sheets were not available for review.

Abbreviations
bgs = below ground surface
NIOSH = National Institute of Occupational Safety and Health

TABLE 6

GROUNDWATER ANALYTICAL RESULTS - METALS[1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in micrograms per liter (µg/L)

Sample Location	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium
Fluor Daniel GTI 1997 Phase II Investigation [2]													
CB5-004	9/29/1997	<60	<10	<200	<5.0	<20	---	<30	<50	<25	---	<4.0	---
CB5-007	9/25/1997	<60	<10	<200	<5.0	<20	---	<30	<50	<25	---	<5.0	---
CB5-027	9/29/1997	<60	**44**	<200	<5.0	<20	---	<30	<50	**(13)**	---	<4.0	---
CB5-051	9/29/1997	<60	**23**	<200	<5.0	<20	---	<30	<50	<25	---	<4.0	---
CB5-053	9/25/1997	<60	**64**	<200	<5.0	<20	---	<30	<50	**34**	---	<5.0	---
CB5-066	12/9/1997	<60 *[<60]* [3]	***37 [42]***	<200 ***[(120)]***	<5.0 *[<5.0]*	<20 *[<20]*	--- ***[30000]***	<30 *[<30]*	<50 *[<50]*	<25 *[<25]*	**71 *[3500]***	**(2.7) [<4.0]**	--- ***[16000]***
	2/17/1998	---	**57**	---	---	---	---	---	---	---	---	---	---
AMEC Geomatrix 2009 Investigation [4]													
SB-1	12/15/2009	<8	<8	**74**	<8/<1	<8/<1	---	**13**	<8/<2	<8/**5**	---	<8/**3**	---
SB-2	12/15/2009	<8	<8	**86**	<8/<1	<8/<1	---	<8	<8/**1**	<8/<1	---	<8/<1	---
SB-2 DUP [5]	12/15/2009	<8	<8	**74**	<8/<1	<8/<1	---	**8**	<8/**1**	<8/<1	---	<8/<1	---
SB-3	12/15/2009	<8	**65**	**55**	<8/<1	<8/<1	---	**46**	<8/**3**	<8/**6**	---	<8/**2**	---
SB-4	12/14/2009	<8	**21**	**15**	<8/<1	<8/1	---	**26**	<8/<2	<8/**2**	---	<8/<1	---
SB-7	12/15/2009	<8	<8	**51**	<8/<1	<8/<1	---	**21**	<8/<2	<8/**2**	---	<8/**1**	---

Sample Location	Date	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Fluor Daniel GTI 1997 Phase II Investigation												
CB5-004	9/29/1997	---	<0.50	<100	<40	---	<50	<20	---	<10	<50	<110
CB5-007	9/25/1997	---	<0.50	<100	<40	---	<50	<20	---	<10	<50	<49
CB5-027	9/29/1997	---	<0.50	<100	<40	---	<50	<20	---	<10	**70**	<58
CB5-051	9/29/1997	---	<0.50	<100	<40	---	<50	<20	---	<10	**(37)**	<32
CB5-053	9/25/1997	---	<0.50	<100	**41**	---	**(14)**	<20	---	<10	**210**	**150**
CB5-066	12/9/1997	***--- [1100]***	<0.50 *[<0.50]*	***(66) [<100]***	<40 *[<40]*	--- ***[4100]***	<50 *[<50]*	<20 *[<20]*	--- ***[590000]***	<10 *[<10]*	***87 [100]***	<45 *[<68]*
	2/17/1998	---	---	---	---	---	---	---	---	---	---	---
AMEC Geomatrix 2009 Investigation												
SB-1	12/15/2009	---	<0.5<0.2	<8	<8	---	<8/<1	<8/<1	---	<8/<1	<10	<80
SB-2	12/15/2009	---	<0.5<0.2	<8	<8	---	<8/<1	<8/<1	---	<8/<1	<8	<80
SB-2 DUP [5]	12/15/2009	---	<0.5<0.2	**16**	**9**	---	<8/<1	<8/<1	---	<8/<1	<8	<80
SB-3	12/15/2009	---	<0.5<0.2	**14**	**16**	---	<8/<1	<8/<1	---	<8/<1	**180**	<80
SB-4	12/14/2009	---	<0.5/<0.2	**17**	<8	---	<8/<1	<8/<1U[6]	---	<8/<1	**68**	<80
SB-7	12/15/2009	---	<0.5<0.2	<8	**8**	---	<8/**3**	<8/<1	---	<8/<1	**19**	<80

TABLE 6

GROUNDWATER ANALYTICAL RESULTS - METALS[1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Notes
1. Detected concentrations are shown in **bold.**
2. Samples collected by Fluor Daniel GTI in 1997 and analyzed for metals using EPA Method 6000/7000 series. Analytical results were complied from data tables in Fluor Daniel GTI's June 1998 Phase II Environmental Site Assessment report; original laboratory data sheets were not available for review.
3. Results shown in brackets and italics are for unfiltered samples.
4. Samples collected by AMEC Geomatrix in 2009 and analyzed for Title 22 metals using EPA Method 6020/7471A. Select metals (beryllium, cadmium, cobalt, copper, lead, mercury, selenium, silver, and thallium) were also analyzed using EPA Method 200.8/7470 to achieve lower reporting limits; results of these metal analyses are shown after the "/".
5. Blind duplicate sample was labeled as SB-20.
6. Silver was detected in sample SB-4-GW and the laboratory blank at the method detection limit of 0.1 µg/L. This result was flagged with a "U" to indicate that silver is considered not detected above the laboratory reporting limit.

Abbreviations
--- = Not analyzed
( ) = Detected concentration is less than reporting limit
< = Constituent not detected above indicated reporting limit
EPA = U.S. Environmental Protection Agency
U = The analyte was analyzed for, but was not detected above the reported sample quantitaion limit.

TABLE 7

DECTIONS OF METALS IN GROUDNWATER SAMPLES[1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in micrograms per liter (µg/L)

Analyte	Number of Samples	Number of Detections	Minimum Detected Concentration	Maximum Detected Concentration
Antimony	12	0	NA	NA
Arsenic	13	7	21	65
Barium	12	7	15	86
Berryllium	12	0	NA	NA
Cadmium	12	0	NA	NA
Chromium	12	5	8	46
Cobalt	12	3	1	3
Copper	12	5	2	34
Iron	1	1	71	71
Lead	1	4	1.0	3
Mercury	12	0	NA	NA
Molybdenum	12	4	14	(66)
Nickel	12	4	8	41
Selenium	12	2	3	(14)
Silver	12	0	NA	NA
Thallium	12	0	NA	NA
Vanadium	12	7	19	210
Zinc	12	1	150	150

Note

1. The metals data is a summary of both the Fluor Daniel GTI 1997 investigation and AMEC 2009 investigation. Data includes filtered samples only.

Abbreviations

( ) = Detected concentration is less than reporting limit
NA = not applicable

TABLE 8

GROUNDWATER ANALYTICAL RESULTS - PETROLEUM HYDROCARBONS, VOCs, PAHs, and PCBs [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in micrograms per liter (µg/L)

Sample Location	Date	Petroleum Hydrocarbons			VOCs [2]	PAHs [2]	PCBs [2]
		TEH	TPHd	TPHmo			
Fluor Daniel GTI 1997 Phase II Investigation [3]							
CB4-068	10/8/1997	**(43)**	--	--	--	All ND	--
CB4-074	10/8/1997	<82	--	--	--	All ND	--
CB4-076	10/13/1997	**220**	--	--	--	All ND	--
CB4-077	10/8/1997	**(40)**	--	--	--	All ND	--
CB4-078	10/1/1997	<50	--	--	--	All ND	--
CB4-081	10/1/1997	<54	--	--	--	All ND	--
CB4-090	10/20/1997	<50	--	--	--	All ND	--
CB4-096	10/1/1997	**(35)**	--	--	--	All ND	--
CB4-097	10/1/1997	**(26)**	--	--	--	All ND	--
CB5-004	9/29/1997	**(34)**	--	--	All ND	All ND	All ND
CB5-007	9/25/1997	**(47)**	--	--	All ND	All ND	All ND
CB5-027	9/29/1997	**(33)**	--	--	All ND	All ND	--
CB5-051	9/29/1997	**(39)**	--	--	All ND	All ND	--
CB5-053	9/25/1997	**(37)**	--	--	**Methylene Chloride (2.6)**	All ND	--
CB5-066	12/9/1997	**(30)**	--	--	--	All ND	All ND
AMEC Geomatrix 2009 Investigation [4]							
SB-1	12/15/2009	--	<50	<100	All ND	--	--
SB-2	12/15/2009	--	<50	<100	All ND	--	--
SB-2 DUP [5]	12/15/2009	--	<50	<100	All ND	--	--
SB-3	12/15/2009	--	<50	<100	All ND	--	--
SB-4	12/14/2009	--	<50	<100	All ND	--	--
SB-7	12/15/2009	--	<50 UJ	<100 UJ	All ND	--	All ND

Notes

1. Detected concentrations are shown in **bold.**
2. Full list of VOCs, PAHs, and PCBs analytes are included in Fluor Daniel 1998 Phase II Investigation Report and AMEC 2010 Focused Site Investigation Report and Human Health Risk Assessment.
3. Samples collected by Fluor Daniel GTI in 1997 and analyzed for TEH in the range of C_9 to C_{40} using Modified EPA Method 8015. Analytical results were complied from data tables in Fluor Daniel GTI's June 1998 Phase II Environmental Site Assessment report; original laboratory data sheets were not available for review.
4. Samples collected by AMEC Geomatrix in 2009 and analyzed for TPHd (carbon range C_{10} through C_{25}) and TPHmo (carbon range C_{25} through C_{40}) using EPA Method 8015 with silica gel cleanup, VOCs using EPA Method 8260, and PCBs using EPA Method 8081.
5. Blind duplicate sample was labeled as SB-20

Abbreviations

( ) = Detected concentration is less than reporting limit
< = Constituent not detected above indicated reporting limit
--- = not analyzed
All ND = none of the constituents included in the VOC, PAH, or PCB analytical suites were detected
EPA = U.S. Environmental Protection Agency
PAHs = polynuclear aromatic hydrocarbons
PCBs = polychlorinated biphenyls
TEH = total extractable hydrocarbons
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
UJ = the analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
VOCs = volatile organic compounds

TABLE 9

SAMPLING AND ANALYSIS PLAN

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [1]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	TPH Fractionation	Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene	Hexane	VOCs	Lead	PCBs	Title 22 Metals	PAHs
Tank Farm Area													
SB-16	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
			2.5	(X)	(X)	*	*	*					
SB-17	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-18	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-19	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
			2.5	(X)	(X)	*	*	*					
SB-20	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-21	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-22	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
SB-23 [2]	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
	Assess TPH fractionation	GW	Water Table [3]	X	X	*	*	*					
SB-24	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-25	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
			2.5	(X)	(X)	*	*	*					
SB-26	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
	Assess TPH fractionation	GW	Water Table [3]	X	X	*	*	*					
SB-27	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-28	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
			2.5	(X)	(X)	*	*	*					
SB-29	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					

TABLE 9

SAMPLING AND ANALYSIS PLAN

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [1]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	TPH Fractionation	Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene	Hexane	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-30	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-31	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
			2.5	(X)	(X)	*	*	*					
SB-32	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5							X	X		
			1.5							X	X		
SB-33	Assess groundwater conditions at upgradient boundary	GW	Water Table	X	X	*	*	*	X			X	
SB-34	Assess groundwater conditions at upgradient boundary	GW	Water Table	X	X	*	*	*	X			X	
SB-35	Assess the presence of PAHs	Soil	1.0										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-36	Assess the presence of PAHs	Soil	1.0										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
Construction Yard Area													
SB-37	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
SB-38	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
SB-39	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
	Assess TPH fractionation	GW	Water Table	X	X	*	*	*					
SB-40	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					

TABLE 9

SAMPLING AND ANALYSIS PLAN

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [1]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	TPH Fractionation	Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene	Hexane	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-41	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
	Assess TPH fractionation	GW	Water Table	X	X	*	*	*					
SB-42	Assess TPH fractionation	Soil	0.5	X	X	*	*	*					
			1.5	X	X	*	*	*					
SB-43	Assess TPH fractionation; delineate PAHs in southeast area	Soil	0.5	X	X	*	*	*					X
			1.5	X	X	*	*	*					X
	Delineate PAHs in southeast area		3,0										X
			4.5										X
			6.0										(X)
			8.0										(X)
			10.0										(X)
	Assess groundwater conditions at upgradient boundary	GW	Water Table	X	X	*	*	*	X			X	
SB-44	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-45	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-46	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [1]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	TPH Fractionation	Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene	Hexane	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-47	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-48	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-49	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-50	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-51	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)
SB-52	Delineate PAHs in southeast area	Soil	0.5										X
			3.0										X
			4.5										X
			6.0										X
			8.0										(X)
			10.0										(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [1]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	TPH Fractionation	Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene	Hexane	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-53	Delineate PAHs in southeast area	Soil	0.5										**X**
			3.0										**X**
			4.5										**X**
			6.0										**X**
			8.0										(X)
			10.0										(X)
SB-54	Delineate PAHs in southeast area	Soil	0.5										**X**
			3.0										**X**
			4.5										**X**
			6.0										**X**
			8.0										(X)
			10.0										(X)
SB-55	Delineate PAHs in southeast area	Soil	0.5										(X)
			3.0										(X)
			4.5										(X)
			6.0										(X)
			8.0										(X)
			10.0										(X)
SB-56	Delineate PAHs in southeast area	Soil	0.5										(X)
			3.0										(X)
			4.5										(X)
			6.0										(X)
			8.0										(X)
			10.0										(X)
SB-57	Delineate PAHs in southeast area	Soil	0.5										(X)
			3.0										(X)
			4.5										(X)
			6.0										(X)
			8.0										(X)
			10.0										(X)
SB-58	Delineate PAHs in southeast area	Soil	0.5										(X)
			3.0										(X)
			4.5										(X)
			6.0										(X)
			8.0										(X)
			10.0										(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [1]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	TPH Fractionation	Naphthalene, 1-methylnaphthalene, 2-methylnaphthalene	Hexane	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-59	Delineate PAHs in southeast area	Soil	0.5										(X)
			3.0										(X)
			4.5										(X)
			6.0										(X)
			8.0										(X)
			10.0										(X)

Analysis

Samples to be analyzed for: TPHd and TPHmo using EPA Method 8015M with silica gel preparation; TPH Fractionation based on the DTSC Interim Guidance on Evaluating Human Health Risks from TPH; naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene using EPA Method 8270C; hexane and VOCs using EPA Method 8260B; lead using EPA Method 6010B; PCBs using EPA Method 8082; Title 22 metals using EPA Methods 200.8/7470; and PAHs using EPA Method 8270C with selective ion monitoring.

Notes

1. Sample locations are shown on Figure 18.
2. A blind duplicate groundwater sample will be collected at the SB-23 location.
3. Sampling interval will be from water table (anticipated to be at approximately 10 to 15 feet bgs) to 5 feet below.

Abbreviations

* = indicates sample will be analyzed for indicated constituents only if TPHd and/or TPHmo are detected in the sample.
( ) = indicates that sample will be held and analyzed based on results of shallower or nearby samples.
DTSC = Department of Toxic Substances Control
EPA = U. S. Environmental Protection Agency
ft bgs = feet below ground surface
PAHs = polynuclear aromatic hydrocarbons
PCBs = polychlorinated biphenyls
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
VOCs = volatile organic compounds

TABLE 10

REQUIRED SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIMES

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Analyses	EPA Method	Sample Matrix	Container	Qty.	Preservative	Holding Time[1]
Total petroleum hydrocarbons quantified as diesel (TPHd) and motor oil (TPHmo) with silica gel cleanup	8015M/ TPH Fractionation	W	1-L amber glass	2	Cool, 4°C	7/40 days
		S	250-mL glass jar/brass, butyrate, or steel tube	1	Cool, 4°C	14/40 days
Volatile organic compounds (VOCs)	8260	W	40-mL VOA vials	3	Cool, 4°C, HCl to pH <2	14 days
Select polynuclear aromatic hydrocarbons (PAHs)	8270C	W	1-L amber glass	2	Cool, 4°C	7/40 days
		S	Brass, butyrate, or steel tube/glass jar	1	Cool, 4°C	14/40 days
Title 22 Metals or selected individual metals	200.8/7470	W	500-mL polyethylene or glass	1	HNO_3, pH <2; Cool, 4°C (field filter)	6 months 28 days (Hg)
	6010B/7471A	S	Brass, butyrate, or steel tube/glass jar	1	Cool, 4°C	6 months 28 days (Hg)

Note

1. "7/40" indicates a hold time of 7 days for extraction and 40 days for analysis after extraction.

Abbreviations

S = soil sample
W = water sample
M = modified
mL = milliliters
L = liter
VOA = volatile organic analysis
HCl = hydrochloric acid
HNO_3 = nitric acid
Hg = mercury

TABLE 11

SOIL ANALYTICAL RESULTS - BACKGROUND METALS [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

SITE	DATE	DEPTH (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
CB6-025	9/30/1997	0.5	< 6	2.2	45	< 0.5	< 2	16	2.5	6.5	5.3	< 0.025	< 10	19	< 1	< 2	< 1	19	23
		4.5	< 6	1.8	67	< 0.5	< 2	19	6	8.6	2.5	< 0.025	< 10	23	< 1	< 2	< 1	23	25
		9.5	< 6	2	46	< 0.5	< 2	23	6.1	9.4	2.7	< 0.025	< 10	30	< 1	< 2	< 1	22	26
CB6-026	9/30/1997	0.5	< 6	2.1	70	< 0.5	< 2	20	8	10	3.9	< 0.025	< 10	24	< 1	< 2	< 1	25	30
		4.5	< 6	1.5	54	< 0.5	< 2	17	6	7.9	2.2	< 0.025	< 10	22	< 1	< 2	< 1	22	25
		9.5	< 6	4	39	< 0.5	< 2	12	5.6	7	3.1	< 0.025	< 10	20	< 1	< 2	< 1	23	25
CB6-027	9/29/1997	0.5	< 6	1.7	48	< 0.5	< 2	12	2.5	6.8	5.2	< 0.025	< 10	15	< 1	< 2	< 1	16	24
		4.5	< 6	3.9	100	< 0.5	< 2	54	16	38	5.3	< 0.025	< 10	94	< 1	< 2	< 1	57	70
		9.5	< 6	4.6	55	< 0.5	< 2	14	6	9.7	3.7	0.025	< 10	19	< 1	< 2	< 1	25	28
CB6-028	10/6/1997	0.5	< 6	3.4	57	< 0.5	< 2	32	9.9	7.4	2.2	< 0.025	< 10	43	< 1	< 2	< 1	33	35
		4.5	< 6	1.4	38	< 0.5	< 2	16	2.5	7.1	2.3	< 0.025	< 10	18	< 1	< 2	< 1	26	25
		9.5	< 6	4.2	41	< 0.5	< 2	34	8.6	5.6	2.1	< 0.025	< 10	40	< 1	< 2	< 1	32	30
		16.5	< 6	1.6	90	< 0.5	< 2	20	5.6	8.3	2.1	0.025	< 10	24	< 1	< 2	< 1	30	28
CB6-029	9/30/1997	0.5	< 6	2.1	58	< 0.5	< 2	19	6.8	10	5.1	< 0.025	< 10	22	< 1	< 2	< 1	24	30
		4.5	< 6	1.8	67	< 0.5	< 2	25	7.2	12	3	0.37	< 10	30	< 1	< 2	< 1	30	31
		9.5	< 6	3.6	72	< 0.5	< 2	62	17	38	3.7	0.15	< 10	110	< 1	< 2	< 1	71	62
CB6-030	9/29/1997	0.5	< 6	1.6	50	< 0.5	< 2	12	2.5	6.5	4.8	< 0.025	< 10	15	< 1	< 2	< 1	16	24
		4.5	< 6	1.9	65	< 0.5	< 2	18	5.2	8.1	2.9	< 0.025	< 10	22	< 1	< 2	< 1	20	21
		7.5	< 6	2	130	< 0.5	< 2	47	12	19	5.5	< 0.025	< 10	64	< 1	< 2	< 1	32	47
		14.5	< 6	4.2	100	< 0.5	< 2	53	16	34	6	0.025	< 10	88	< 1	< 2	< 1	53	63
CB6-031	10/6/1997	0.5	< 6	1.2	43	< 0.5	< 2	20	7.1	9.8	2	< 0.025	< 10	22	< 1	< 2	< 1	36	27
		4.5	< 6	1.9	40	< 0.5	< 2	19	5.4	6.1	1.9	< 0.025	< 10	23	< 1	< 2	< 1	29	21
		9.5	< 6	3.2	43	< 0.5	< 2	38	9.8	6.7	1.9	< 0.025	< 10	46	< 1	< 2	< 1	32	34
		16.5	< 6	1.4	58	< 0.5	< 2	16	5.3	7.2	1.6	< 0.025	< 10	22	< 1	< 2	< 1	22	20
CB6-032	10/6/1997	0.5	< 6	1.2	56	< 0.5	< 2	18	5.3	8.2	2.4	< 0.025	< 10	21	< 1	< 2	< 1	27	28
		4.5	< 6	1.6	41	< 0.5	< 2	18	2.5	6.9	2.2	< 0.025	< 10	20	< 1	< 2	< 1	25	23
		9.5	< 6	3	50	< 0.5	< 2	37	10	8.5	2.3	< 0.025	< 10	44	< 1	< 2	< 1	36	35
		16.5	< 6	2.7	100	< 0.5	< 2	29	9.6	13	2.7	< 0.025	< 10	41	< 1	< 2	< 1	40	35
CB6-033	9/29/1997	0.5	< 6	1.5	47	< 0.5	< 2	13	2.5	6.4	2.7	< 0.025	< 10	16	< 1	< 2	< 1	16	21
		4.5	< 6	1.7	64	< 0.5	< 2	14	5.3	7	2.4	< 0.025	< 10	18	< 1	< 2	< 1	18	19
		7.5	< 6	3	30	< 0.5	< 2	13	2.5	5	2.6	< 0.025	< 10	17	< 1	< 2	< 1	19	16
CB6-034	10/6/1997	0.5	< 6	1.9	33	< 0.5	< 2	11	2.5	5.2	2	< 0.025	< 10	16	< 1	< 2	< 1	16	16
		4.5	< 6	1.5	53	< 0.5	< 2	15	5.8	7.6	2.3	< 0.025	< 10	22	< 1	< 2	< 1	18	20
		9.5	< 6	5.1	31	< 0.5	< 2	28	7.8	5.2	2.7	< 0.025	< 10	35	< 1	< 2	< 1	26	29
		16.5	< 6	1	28	< 0.5	< 2	10	2.5	4.7	1.5	0.025	< 10	9.8	< 1	< 2	< 1	13	15
CB6-035	10/6/1997	0.5	< 6	1.3	61	< 0.5	< 2	24	8.4	12	2.2	< 0.025	< 10	23	< 1	< 2	< 1	40	34
		4.5	< 6	1.7	41	< 0.5	< 2	18	5.5	6.5	1.9	< 0.025	< 10	21	< 1	< 2	< 1	29	22
		9.5	< 6	1.3	45	< 0.5	< 2	19	2.5	6.7	3.1	< 0.025	< 10	19	< 1	< 2	< 1	25	25
		16.5	< 6	3.2	66	< 0.5	< 2	37	12	8.1	2.7	< 0.025	< 10	48	< 1	< 2	< 1	37	40
CB6-036	9/29/1997	0.5	< 6	1.6	44	< 0.5	< 2	13	2.5	6.2	3.4	< 0.025	< 10	17	< 1	< 2	< 1	17	21
		4.5	< 6	1.5	42	< 0.5	< 2	12	2.5	5.7	2.5	< 0.025	< 10	14	< 1	< 2	< 1	19	< 10
		7.5	< 6	0.59	37	< 0.5	< 2	13	2.5	6.1	0.84	< 0.025	< 10	17	< 1	< 2	< 1	21	17
CB6-037	10/6/1997	0.5	< 6	1.4	48	< 0.5	< 2	13	2.5	6	2	< 0.025	< 10	20	< 1	< 2	< 1	17	19
		4.5	< 6	1.3	29	< 0.5	< 2	13	2.5	4.7	1.5	< 0.025	< 10	17	< 1	< 2	< 1	18	16
		9.5	< 6	3.6	44	< 0.5	< 2	26	8.3	5.8	2.4	< 0.025	< 10	38	< 1	< 2	< 1	25	33
		16.5	< 6	3.6	23	< 0.5	< 2	21	5.8	3.8	2.4	< 0.025	< 10	25	< 1	< 2	< 1	19	20

TABLE 11

SOIL ANALYTICAL RESULTS - BACKGROUND METALS [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Results reported in milligrams per kilogram (mg/kg)

SITE	DATE	DEPTH (ft)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
CB6-038	10/6/1997	0.5	< 6	2.1	51	< 0.5	< 2	16	2.5	7.3	4	< 0.025	< 10	20	< 1	< 2	< 1	28	24
		4.5	< 6	1.6	37	< 0.5	< 2	17	5.2	6	1.9	< 0.025	< 10	21	< 1	< 2	< 1	26	21
		9.5	< 6	4.6	78	< 1	< 4	36	14	9.5	2.9	< 0.025	< 20	52	< 1	< 4	< 1	42	46
		16.5	< 6	5.6	67	< 0.5	< 2	40	13	8.5	2.4	< 0.025	< 10	55	< 1	< 2	< 1	36	38
CB6-039	9/29/1997	0.5	< 6	1.2	37	< 0.5	< 2	11	2.5	5.6	3.2	< 0.025	< 10	14	< 1	< 2	< 1	18	< 9
		4.5	< 6	1.2	42	< 0.5	< 2	12	2.5	5.6	3.2	< 0.025	< 10	13	< 1	< 2	< 1	18	22
		7.5	< 6	1	47	< 0.5	< 2	16	5.9	23	86	< 0.025	< 10	73	< 1	< 2	< 1	110	53
CB6-040	9/29/1997	0.5	< 6	1.2	30	< 0.5	< 2	8.2	2.5	4.4	2.2	< 0.025	< 10	12	< 1	< 2	< 1	12	23
		4.5	< 6	1.5	50	< 0.5	< 2	12	2.5	21	20	0.025	< 10	38	< 1	< 2	< 1	94	40
		7.5	< 6	1.4	43	< 0.5	< 2	16	5	6.2	1.8	< 0.025	< 10	18	< 1	< 2	< 1	17	< 10
CB6-041	10/6/1997	0.5	< 6	1.7	36	< 0.5	< 2	13	2.5	5.2	2.1	< 0.025	< 10	19	< 1	< 2	< 1	17	18
		4.5	< 6	2.2	34	< 0.5	< 2	17	5.6	5.4	3.8	< 0.025	< 10	24	< 1	< 2	< 1	18	22
		9.5	< 6	4.1	34	< 0.5	< 2	23	7.5	5.1	2.3	< 0.025	< 10	35	< 1	< 2	< 1	21	25
		16.5	< 6	5.3	32	< 0.5	< 2	21	6.8	4.2	2.4	< 0.025	< 10	29	< 1	< 2	< 1	20	21
CB6-042	10/2/1997	0.5	< 6	2	170	< 0.5	< 2	22	6.2	10	2.3	0.24	< 10	25	< 1	< 2	< 1	28	25
		5.5	< 6	3.9	70	< 0.5	< 2	32	9.4	8	2.6	< 0.025	< 10	42	< 1	< 2	< 1	34	38
		10.25	< 6	2.7	68	< 0.5	< 2	30	7.1	12	4.5	< 0.025	< 10	32	< 1	< 2	< 1	39	36
		16.75	< 6	5.3	82	< 0.5	< 2	32	15	10	2.6	< 0.025	< 10	48	< 1	< 2	< 1	42	44
CB6-043	9/29/1997	0.5	< 6	1.1	49	< 0.5	< 2	11	2.5	6.1	4.5	< 0.025	< 10	13	< 1	< 2	< 1	14	21
		4.5	< 6	1.3	45	< 0.5	< 2	12	2.5	6.1	2.8	< 0.025	< 10	15	< 1	< 2	< 1	16	20
		7.5	< 6	1.5	41	< 0.5	< 2	16	2.5	6.3	1.6	< 0.025	< 10	17	< 1	< 2	< 1	22	22
CB6-044	10/6/1997	0.5	< 6	4.3	98	< 0.5	< 2	19	7.4	5.5	3.1	0.025	< 10	33	< 1	< 2	< 1	21	22
		4.5	< 6	3.2	32	< 0.5	< 2	13	5.3	4.3	2.7	< 0.025	< 10	21	< 1	< 2	< 1	15	20
		9.5	< 6	1.6	48	< 0.5	< 2	8.9	2.5	5.3	6.2	< 0.025	< 10	13	< 1	< 2	< 1	13	20
		16.5	< 6	0.91	21	< 0.5	< 2	8.1	2.5	3.1	1.4	< 0.025	< 10	13	< 1	< 2	< 1	13	11
CB6-045	9/29/1997	0.5	< 6	4.1	120	< 0.5	< 2	22	7.8	8.5	4	0.025	< 10	32	< 1	< 2	< 1	25	30
		4.5	< 6	1.4	40	< 0.5	< 2	11	2.5	5.3	2.5	< 0.025	< 10	15	< 1	< 2	< 1	18	< 8.5
		9.5	< 6	1.9	37	< 0.5	< 2	17	2.5	5.7	2.6	< 0.025	< 10	18	< 1	< 2	< 1	18	< 9.5
		14.5	< 6	1.9	26	< 0.5	< 2	15	2.5	4.3	1.9	< 0.025	< 10	14	< 1	< 2	< 1	18	< 7.5
		19.5	< 6	2.2	34	< 0.5	< 2	9.7	2.5	4.7	2.3	< 0.025	< 10	14	< 1	< 2	< 1	15	18
		24.5	< 6	1.3	33	< 0.5	< 2	12	2.5	5.2	1.2	< 0.025	< 10	16	< 1	< 2	< 1	15	16
CB6-046	9/29/1997	0.5	< 6	1.6	33	< 0.5	< 2	15	2.5	5.2	1.7	< 0.025	< 10	17	< 1	< 2	< 1	23	17
		4.5	< 6	1.1	29	< 0.5	< 2	8.6	2.5	4.5	1.3	< 0.025	< 10	15	< 1	< 2	< 1	15	15
		9.5	< 6	1.6	38	< 0.5	< 2	14	2.5	6.4	1.7	< 0.025	< 10	17	< 1	< 2	< 1	21	21
CB6-047	10/9/1997	0.5	< 6	1.3	34	< 0.5	< 2	11	2.5	5.7	1.8	< 0.025	< 10	13	< 1	< 2	< 1	15	17
		5.5	< 6	1.3	29	< 0.5	< 2	11	2.5	4.2	1.7	< 0.025	< 10	13	< 1	< 2	< 1	17	16
CB6-048	10/9/1997	0.5	< 6	3	46	< 0.5	< 2	20	5.8	7.2	3.3	< 0.025	< 10	24	< 1	< 2	< 1	23	23
		5.5	< 6	1.2	25	< 0.5	< 2	9	2.5	4.6	1.4	< 0.025	< 10	14	< 1	< 2	< 1	14	14
CB6-049	9/29/1997	0.5	< 6	1.6	33	< 0.5	< 2	15	5.5	7.4	2	0.025	< 10	18	< 1	< 2	< 1	24	22
		4.5	< 6	1.9	24	< 0.5	< 2	10	2.5	5.1	1.6	< 0.025	< 10	16	< 1	< 2	< 1	14	17
		9.5	< 6	1.8	26	< 0.5	< 2	12	2.5	4.5	1.8	< 0.025	< 10	16	< 1	< 2	< 1	13	< 8.5

Note
1. Samples collected by Fluor Daniel GTI, Inc., as part of the Phase II Environmental Site Assessment for soil and groundwater at the Contra Costa Power Plant (CCPP) and analyzed in accordance with U.S. EPA Methods 6000 and 7000 series.

Abbreviation
< = analytical result less than the detection limit indicated

TABLE 12

HYPOTHETICAL EXPOSURE PARAMETERS FOR CONSTRUCTION (TRENCH EXCAVATION) WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure	
GENERAL EXPOSURE PARAMETERS			
Exposure Frequency (EF)	days/year	Value:	250
		Rationale:	U.S. EPA, 2002
Exposure Duration (ED)	years	Value:	1
		Rationale:	U.S. EPA, 2002
Body Weight (BW)	kg	Value:	70
		Rationale:	DTSC, 1996; U.S. EPA, 1991; U.S. EPA, 2002
Averaging Time (AT)	days	Value:	25,550 (carcinogens) 365 (noncarcinogens)
		Rationale:	DTSC, 1996; U.S. EPA, 1991; U.S. EPA, 2002
PATHWAY-SPECIFIC PARAMETERS			
Incidental Soil Ingestion			
Soil Ingestion Rate (IR_s)	mg/day	Value:	480
		Rationale:	U.S. EPA 2002
Dermal Contact with Soil			
Exposed Skin Surface Area (SA_s)	cm^2/day	Value:	5,800
		Rationale:	U.S. EPA 2002
Soil-to-Skin Adherence Factor (SAF)	mg/cm^2	Value:	0.51
		Rationale:	U.S. EPA 2002
Absorption Fraction (ABS)	unitless	Value:	Chemical-specific
		Rationale:	U.S. EPA, 2004
Inhalation of Vapors in Ambient Air			
Inhalation Rate (IHR_a)	m^3/hr	Value:	2.5
		Rationale:	U.S. EPA, 2002b; U.S. EPA 1997a
Exposure Time (ET)	hours/day	Value:	8
		Rationale:	DTSC, 1996; U.S. EPA, 1991; Standard work day

TABLE 12

HYPOTHETICAL EXPOSURE PARAMETERS FOR CONSTRUCTION (TRENCH EXCAVATION) WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure	
Inhalation of Suspended Soil Particulates			
Particulate Emission Factor (PEF)	m^3/kg	Value:	2.0×10^7
		Rationale:	DTSC, 1999; corresponds to the PM10 Ambient Air Quality Standard of 50 $\mu g/m^3$; also consistent with U.S. EPA, 2002, recommended PEF for construction activities other than unpaved road traffic (3.6×10^7 m^3/kg)
Inhalation Rate (IHR_a)	m^3/hr	Value:	2.5
		Rationale:	U.S. EPA, 2002, U.S. EPA, 1997
Exposure Time (ET)	hours	Value:	8
		Rationale:	DTSC, 1996; U.S. EPA, 1991; Standard work day
Inhalation of Volatiles in Trench Ambient Air			
Exposure Time (ET)	hours/day	Value:	2
		Rationale:	Professional judgment
Event Frequency (EV)	event/day	Value:	1
		Rationale:	Professional judgment
Exposure Frequency (EF)	days/year	Value:	20
		Rationale:	Professional judgment
Inhalation Rate (IHRa)	m^3/hr	Value:	2.5
		Rationale:	DTSC, 1996; U.S. EPA, 1991; Standard work day
Dermal Contact with Groundwater			
Event Time (ET)	hours/day	Value:	0.5
		Rationale:	Professional judgment; based on incidental contact
Event Frequency (EV)	event/day	Value:	1
		Rationale:	Professional judgment
Exposure Frequency (EF)	days/year	Value:	20
		Rationale:	Professional judgment

TABLE 12

HYPOTHETICAL EXPOSURE PARAMETERS FOR CONSTRUCTION (TRENCH EXCAVATION) WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure
Exposed Skin Surface Area (SA_s)	cm^2	Value: 7,000 Rationale: U.S. EPA, 1997. Assuming that workers stand in ~2 feet of water; thus, forearms, hands, lower legs, and feet (30.6% of total body area, 23,000 cm^3) are exposed.

Abbreviations

- cm^2 = squared centimeters
- kg = kilogram
- mg/cm^2 = milligrams per squared centimeters
- mg/day = milligrams per day
- m^3/hr = cubic meters per hour
- m^3/kg = cubic meters per kilogram

References

Department of Toxic Substances Control (DTSC), 1996, Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities (corrected and reprinted): Office of the Scientific Advisor, California Environmental Protection Agency (Cal/EPA), Sacramento, California.

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U.S. EPA, 1997, Exposure Factors Handbook, Office of Health and Environmental Assessment, Washington, D.C.

U.S. EPA, 2002, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites: Office of Solid Waste and Emergency Response, December.

U.S. EPA, 2004, Risk Assessment Guidance for Superfund (RAGS): Volume 1 – Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final, Office of Superfund Remediation and Technology Innovation, July.

TABLE 13

HYPOTHETICAL EXPOSURE PARAMETERS FOR OFF-SITE RESIDENTS DURING CONSTRUCTION AND OPERATIONS

Marsh Landing Generating Station
Mirant Contra Cost Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure
General Exposure Parameters		
Exposure Frequency (EF)	days/year	Value: 350 Rationale: DTSC, 1996; U.S. EPA, 1991
Exposure Duration (ED)	years	Value: 6 (child) 24 (adult)
Body Weight (BW)	kg	Rationale: DTSC, 1996; U.S. EPA, 1991 Value: 15 (child) 70 (adult)
Averaging Time (AT)	days	Rationale: DTSC, 1996; U.S. EPA, 1991 Value: 25,550 (carcinogens) 2,190 (child—noncarcinogens) 8,760 (adult—noncarcinogens)
Pathway Specific Parameters		
Inhalation of Vapors in Ambient Air		
Inhalation Rate (IHR_a)	m^3/hr	Value: 0.42 (child) 0.83 (adult) Rationale: U.S. EPA, 1997 (child); DTSC, 1996 (adult)
Exposure Time (ET)	hours	Value: 24 Rationale: DTSC, 1996; U.S. EPA, 1991
Inhalation of Suspended Soil Particulates		
Inhalation Rate (IHR_a)	m^3/hr	Value: 0.42 (child) 0.83 (adult) Rationale: U.S. EPA, 1997 (child); DTSC, 1996 (adult)
Particulate Emission Factor (PEF)	m^3/kg	Value: 4.4×10^8 Rationale: U.S. EPA, 2002
Exposure Time (ET)	hours	Value: 24 Rationale: DTSC, 1996; U.S. EPA, 1991

Abbreviations
kg = kilograms
m^3/hr = cubic meters per hour
m^3/kg = cubic meters per kilogram

TABLE 13

HYPOTHETICAL EXPOSURE PARAMETERS FOR
OFF-SITE RESIDENTS DURING CONSTRUCTION AND OPERATIONS
Marsh Landing Generating Station
Mirant Contra Cost Power Plant
Contra Costa County, California

References

Department of Toxic Substances Control (DTSC), 1996, Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities (corrected and reprinted): Office of the Scientific Advisor, California Environmental Protection Agency (Cal/EPA), Sacramento, California.

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U.S. EPA, 1997, Exposure Factors Handbook, Volume 1: Office of Research and Development, Washington, D.C.

U.S. EPA, 2002, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites: Office of Solid Waste and Emergency Response, December.

TABLE 14

HYPOTHETICAL EXPOSURE PARAMETERS FOR OFF-SITE WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure
General Exposure Parameters		
Exposure Frequency (EF)	days/year	Value: 250 Rationale: DTSC, 1996; U.S. EPA, 1991
Exposure Duration (ED)	years	Value: 25
Body Weight (BW)	kg	Rationale: DTSC, 1996; U.S. EPA, 1991 Value: 70
Averaging Time (AT)	days	Rationale: DTSC, 1996; U.S. EPA, 1991 Value: 25,550 (carcinogens) 9125 (noncarcinogens)
Pathway Specific Parameters		
Inhalation of Vapors in Ambient Air		
Inhalation Rate (IHR_a)	m^3/hr	Value: 0.83 Rationale: DTSC, 1996
Exposure Time (ET)	hrs/day	Value: 8 Rationale: DTSC, 1996; U.S. EPA, 1991; Standard work day
Inhalation of Suspended Soil Particulates		
Inhalation Rate (IHR_a)	m^3/hr	Value: 0.83 Rationale: DTSC, 1996
Particulate Emission Factor (PEF)	m^3/kg	Value: 4.4×10^8 Rationale: U.S. EPA, 2002
Exposure Time (ET)	hrs/day	Value: 8 Rationale: DTSC, 1996; U.S. EPA, 1991; Standard work day

Abbreviations
kg = kilograms
m^3/hr = cubic meters per hour
m^3/kg = cubic meters per kilogram

TABLE 14

HYPOTHETICAL EXPOSURE PARAMETERS FOR OFF-SITE WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

References

Department of Toxic Substances Control (DTSC), 1996, Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities (corrected and reprinted): Office of the Scientific Advisor, California Environmental Protection Agency (Cal/EPA), Sacramento, California.

U.S. Environmental Protection Agency (U.S. EP), 1991, Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors: Office of Emergency and Remedial Response, Washington, D.C.

U.S. EPA, 2002, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites: Office of Solid Waste and Emergency Response, December.

TABLE 15

HYPOTHETICAL EXPOSURE PARAMETERS FOR ON-SITE OUTDOOR WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure	
General Exposure Parameters			
Exposure Frequency (EF)	days/year	Value:	250
		Rationale:	DTSC, 1996; U.S. EPA, 1991
Exposure Duration (ED)	years	Value:	25
		Rationale:	DTSC, 1996; U.S. EPA, 1991
Body Weight (BW)	kg	Value:	70
		Rationale:	DTSC, 1996; U.S. EPA, 1991
Averaging Time (AT)	days	Value:	25,550 (carcinogens) 9125 (noncarcinogens)
		Rationale:	DTSC, 1996; U.S. EPA, 1991
Pathway-Specific Parameters			
Incidental Soil Ingestion			
Soil Ingestion Rate (IR_s)	mg/day	Value:	100
		Rationale:	DTSC, 1996; U.S. EPA, 1991; U.S. EPA, 2002
Dermal Contact with Soil			
Exposed Skin Surface Area (SA_s)	cm^2/day	Value:	3,300
		Rationale:	U.S. EPA, 2002; U.S. EPA, 2004
Soil-to-Skin Adherence Factor (SAF)	mg/cm^2	Value:	0.2
		Rationale:	U.S. EPA, 2002; U.S. EPA, 2004
Absorption Fraction (ABS)	unitless	Value:	Chemical-specific
		Rationale:	U.S. EPA, 2004
Inhalation of Vapors in Ambient Air			
Inhalation Rate (IHR_a)	m^3/hr	Value:	0.83
		Rationale:	DTSC, 1996
Exposure Time (ET)	hrs/day	Value:	8
		Rationale:	DTSC, 1996; U.S. EPA, 1991; Standard work day

TABLE 15

HYPOTHETICAL EXPOSURE PARAMETERS FOR ON-SITE OUTDOOR WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure	
Inhalation of Suspended Soil Particulates			
Particulate Emission Factor (PEF)	m^3/kg	Value:	1.32×10^9
		Rationale:	Estimated
Inhalation Rate (IHR_a)	m^3/hr	Value:	0.83
		Rationale:	DTSC, 1996
Exposure Time (ET)	hrs/day	Value:	8
		Rationale:	DTSC, 1996; U.S. EPA, 1991; Standard work day

Abbreviations

- cm^2/day = square centimeters per day
- hrs/day = hours per day
- kg = kilograms
- m^3/hr = cubic meters per hour
- m^3/kg = cubic meters per kilogram
- mg/cm^2 = milligrams per square centimeters
- mg/day = milligrams per day

References

Department of Toxic Substances Control (DTSC), 1996, Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities (corrected and reprinted), Office of the Scientific Advisor, Department of Toxic Substances Control, Sacramento, California.

U.S. Environmental Protection Agency (U.S. EPA), 1991, Interoffice Memorandum Regarding the Human Health Evaluation Manual, Supplemental Guidance: “Standard Default Exposure Factors,” Office of Emergency and Remedial Response, Washington, D.C.

U.S. EPA, 2002, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, Office of Solid Waste and Emergency Response, December.

U.S. EPA, 2004, Risk Assessment Guidance for Superfund (RAGS): Volume 1 – Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final, Office of Superfund Remediation and Technology Innovation, July.

TABLE 16

HYPOTHETICAL EXPOSURE PARAMETERS FOR ON-SITE INDOOR WORKER

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Exposure Parameter	Units	Reasonable Maximum Exposure	
GENERAL EXPOSURE PARAMETERS			
Exposure Frequency (EF)	days/year	Value:	250
		Rationale:	DTSC, 1996; U.S. EPA, 1991
Exposure Duration (ED)	years	Value:	25
		Rationale:	DTSC, 1996; U.S. EPA, 1991
Body Weight (BW)	kg	Value:	70
		Rationale:	DTSC, 1996; U.S. EPA, 1991
Averaging Time (AT)	days	Value:	25,550 (carcinogens) 9,125 (noncarcinogens)
		Rationale:	DTSC, 1996; U.S. EPA, 1991
PATHWAY-SPECIFIC PARAMETERS			
Inhalation of Vapors in Indoor Air			
Inhalation Rate (IHRa)	m^3/hr	Value:	2.5
		Rationale:	DTSC, 1996
Exposure Time (ET)	hours/day	Value:	8
		Rationale:	DTSC, 1996; U.S. EPA, 1991

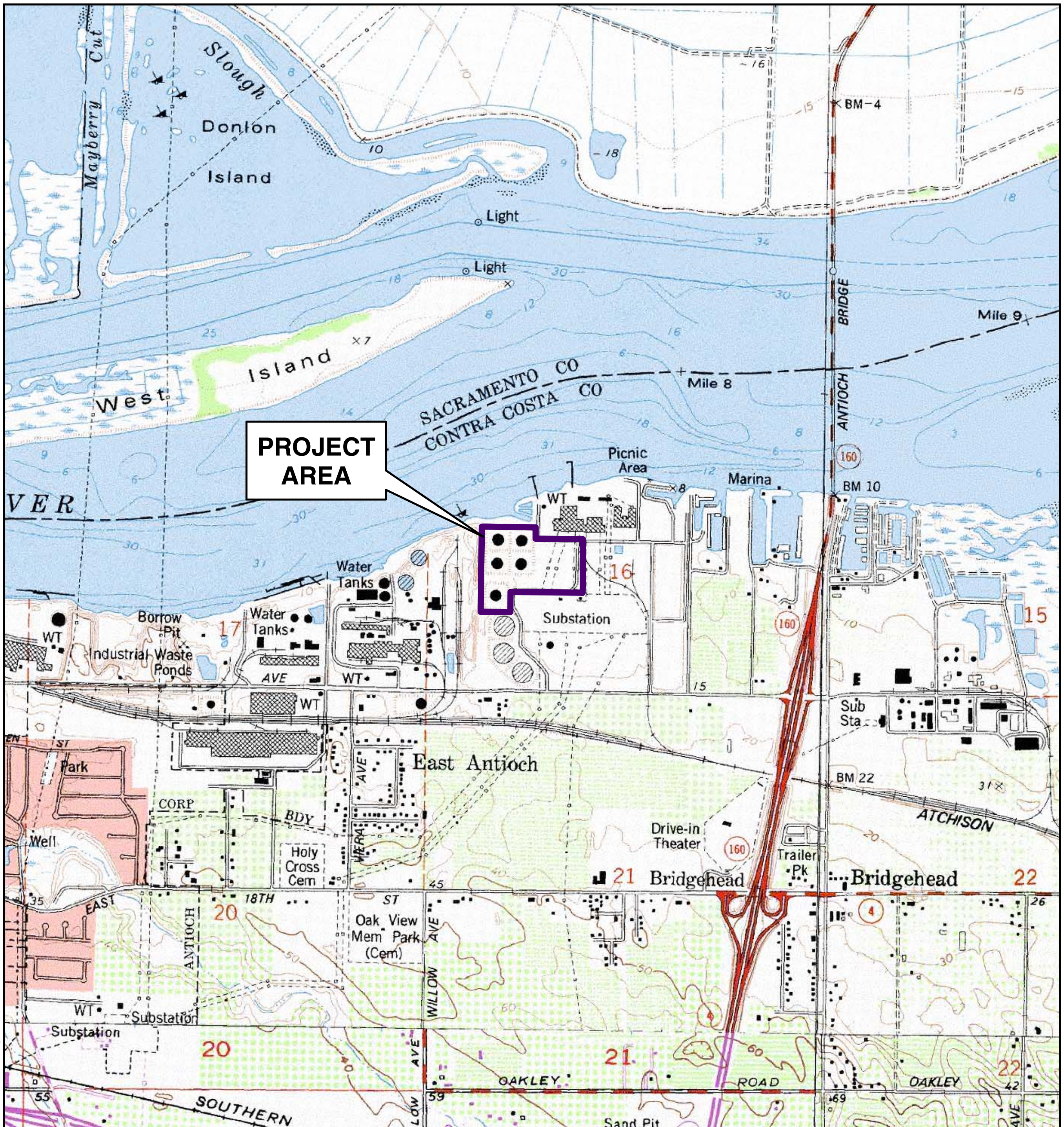
Abbreviations
kg = kilograms
m^3/hr = cubic meters per hour

References

Department of Toxic Substances Control (DTSC), 1996, Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities (corrected and reprinted), Office of the Scientific Advisor, California Environmental Protection Agency (Cal/EPA), Sacramento, California.

U.S. Environmental Protection Agency (U.S. EPA), 1991, Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors: Office of Emergency and Remedial Response, Washington, D.C.

FIGURES



Base map from USGS 7.5' Antioch North, Antioch South, Brentwood and Jersey Island, California topographic quadrangles.

California

N

0 2,000 4,000 Feet

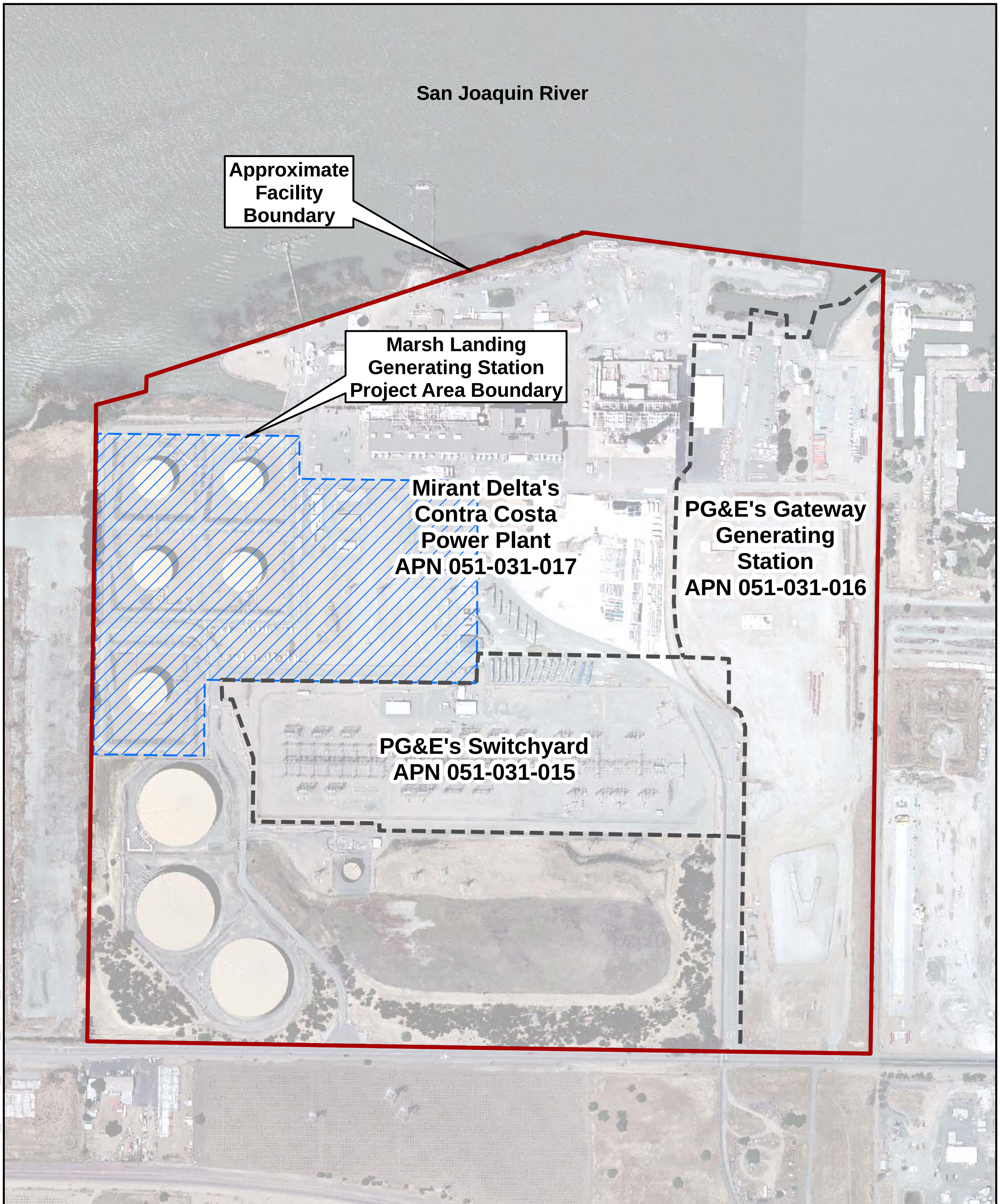
PROJECT AREA LOCATION MAP
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: JLP	Date: 4/29/2010	Project No. 15317.000

AMEC Geomatrix

Figure 1

File path: S:\15300\15317\15317.000\task_04\10_0429_hsp_fig_01.mxd



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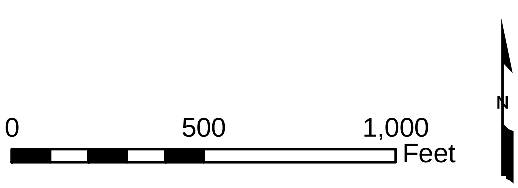
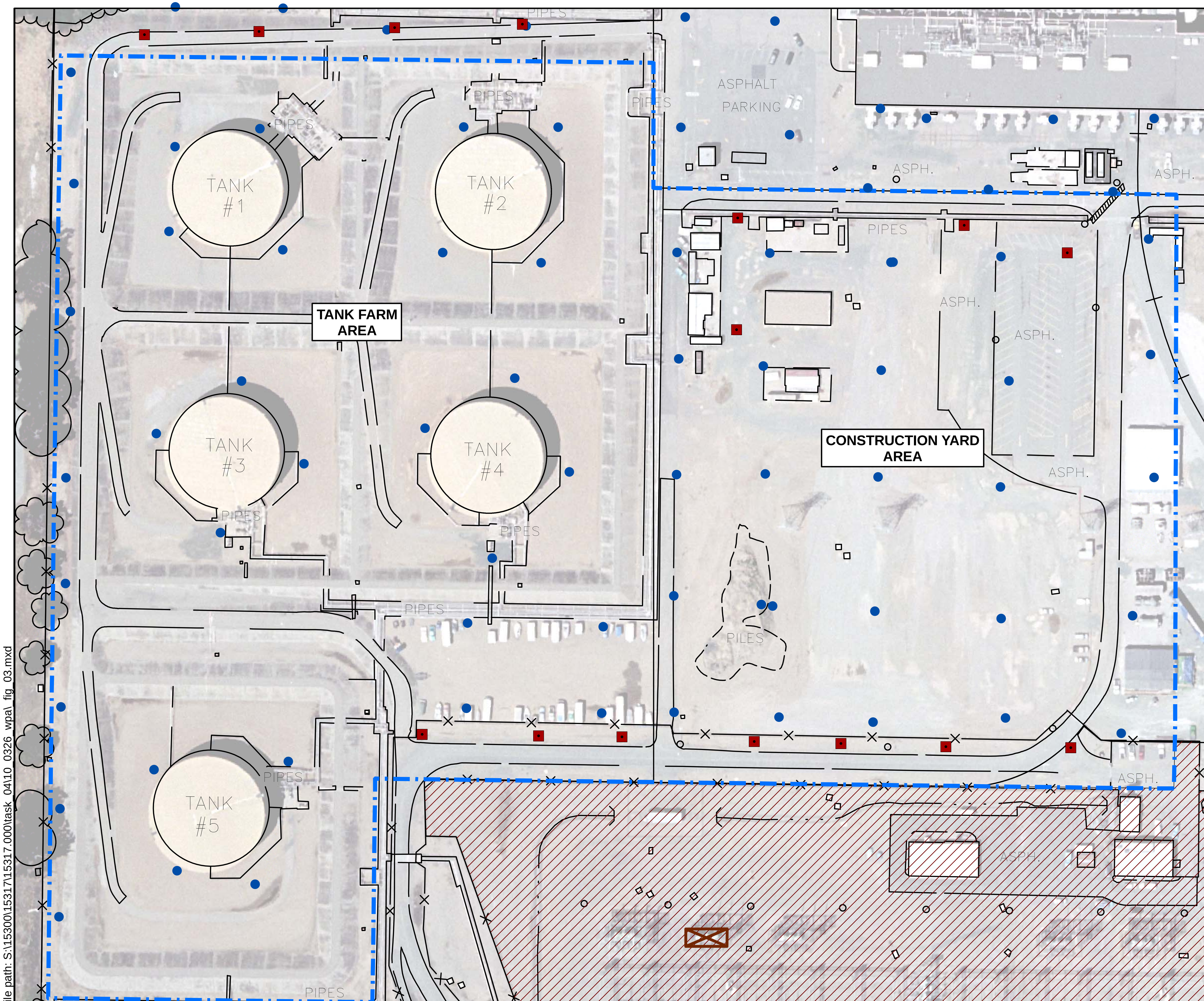
Aerial image from USGS digital orthophoto dated May 23, 2002.



FACILITY LAYOUT
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: JLP	Date: 4/30/2010	Project No. 15317.000
AMEC Geomatrix		Figure 2



Explanation

- 2009 sampling location
- 1997 sampling location
- Marsh Landing Generating Station project boundary
- PG&E switchyard
- Reported oil-filled circuit breaker explosion site

N

0 120 240 Feet

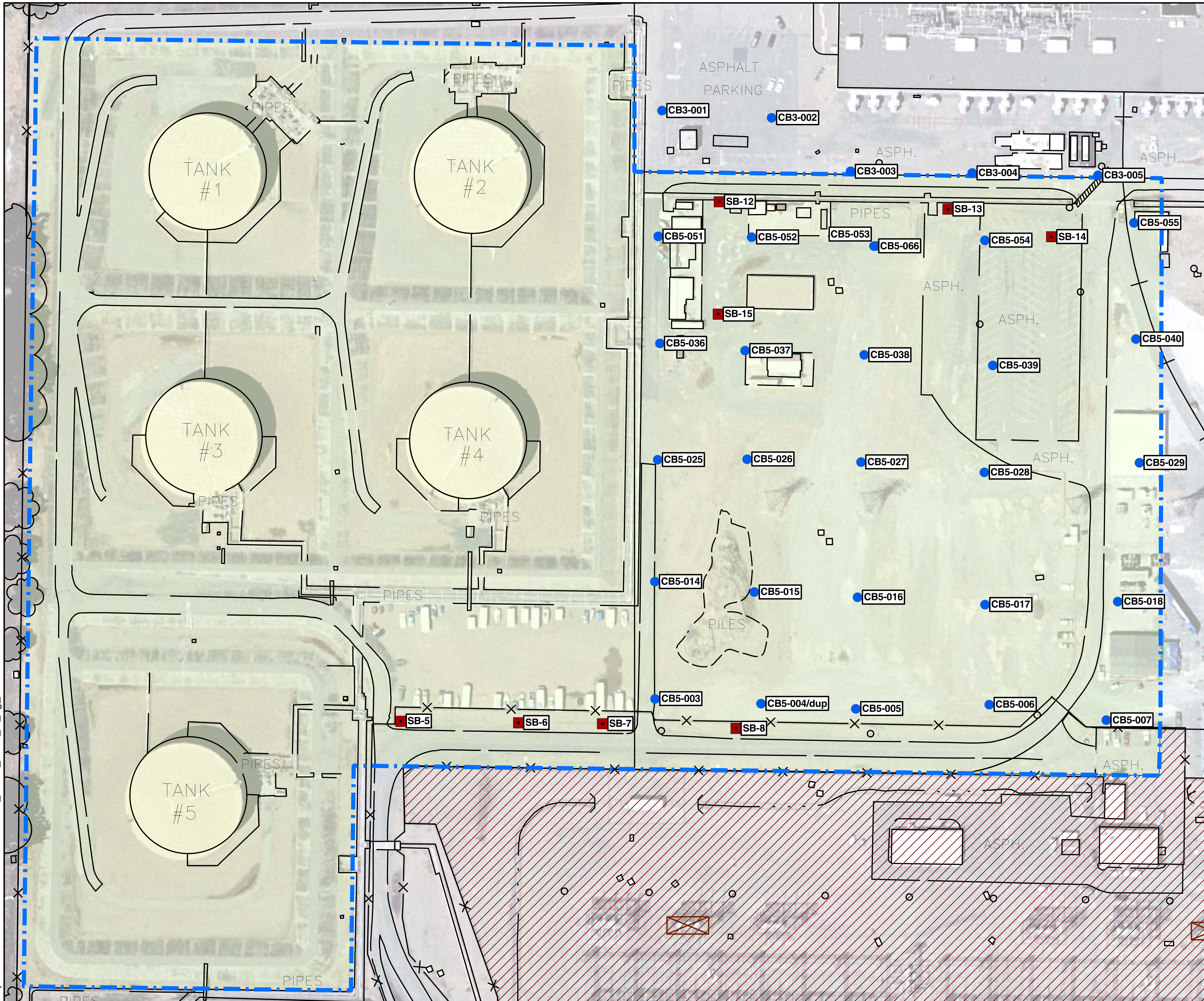
Aerial image from USGS digital orthophoto dated May 23, 2002.

PREVIOUS SAMPLING LOCATIONS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: JLP | Date: 4/30/2010 | Project No. 15317.000

AMEC Geomatrix | Figure 3

File path: S:\15300\15317\15317.000\task_04110_0326_wpa_fig_03.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

N

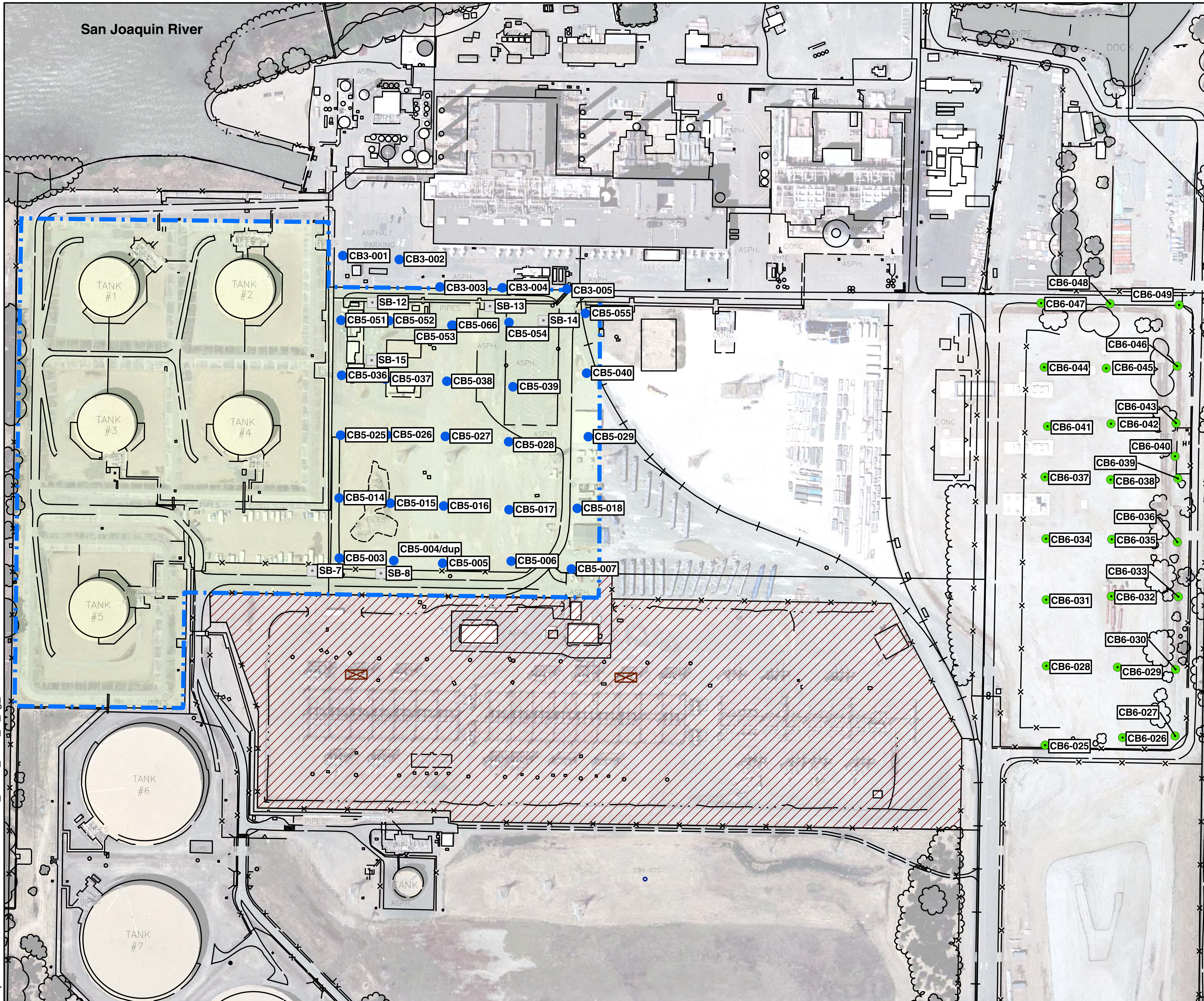
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

LOCATIONS WHERE METALS WERE ANALYZED IN SOIL
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 2/15/2010	Project No. 15317.000
AMEC Geomatrix		Figure 4A

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_04a.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- 1997 background soil sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

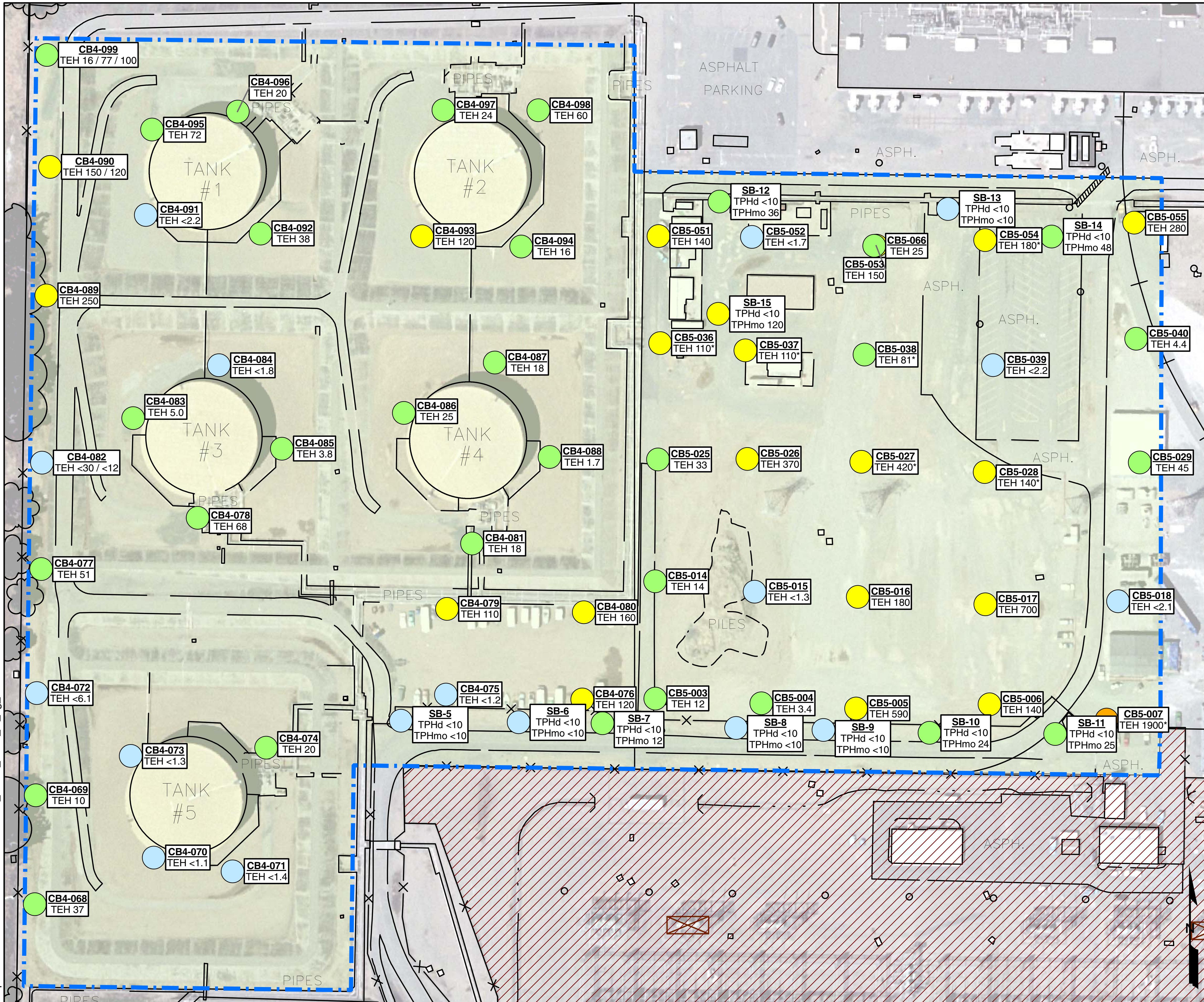
N

0 200 400 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

BACKGROUND SAMPLING LOCATIONS IN SOIL
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 2/16/2010	Project No. 15317.000
AMEC Geomatrix		Figure 4B



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Explanation

- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site
- Not detected
- Up to 100 mg/kg
- 101 - 1000 mg/kg
- >1000 mg/kg

CB5-028 ← Sample I.D.
TEH 140 ← Concentration in mg/kg

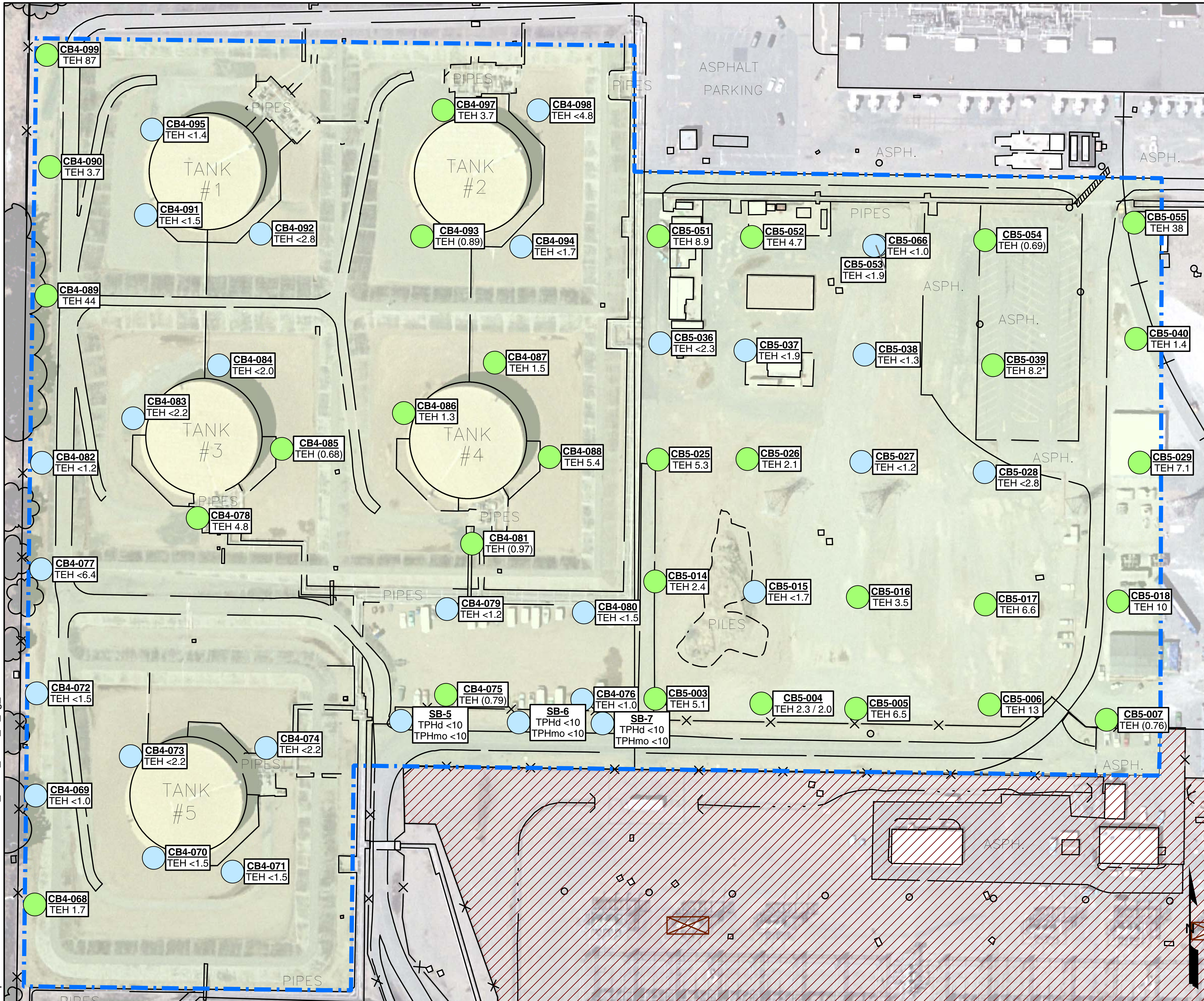
Notes:
TEH = total extractable hydrocarbons
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
BGS = below ground surface
mg/kg = milligrams per kilogram
/ = duplicate sample results
* note on original data tables indicates "Duplicate records found, data review required"
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

PETROLEUM HYDROCARBON ANALYTICAL RESULTS IN SOIL 0.5 TO 1.5 FEET BGS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 5



Explanation

PG&E switchyard

Marsh Landing Generating Station project boundary (the site)

Reported oil-filled circuit breaker explosion site

Not detected

Up to 100 mg/kg

101 - 1000 mg/kg

>1000 mg/kg

CB5-028 TEH 140 — Sample I.D. / Concentration in mg/kg

Notes:
TEH = total extractable hydrocarbons
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
BGS = below ground surface
mg/kg = milligrams per kilogram
( ) = detected concentration is less than reporting limit
/ = duplicate sample results
* note on original data tables indicates "Duplicate records found, data review required"
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

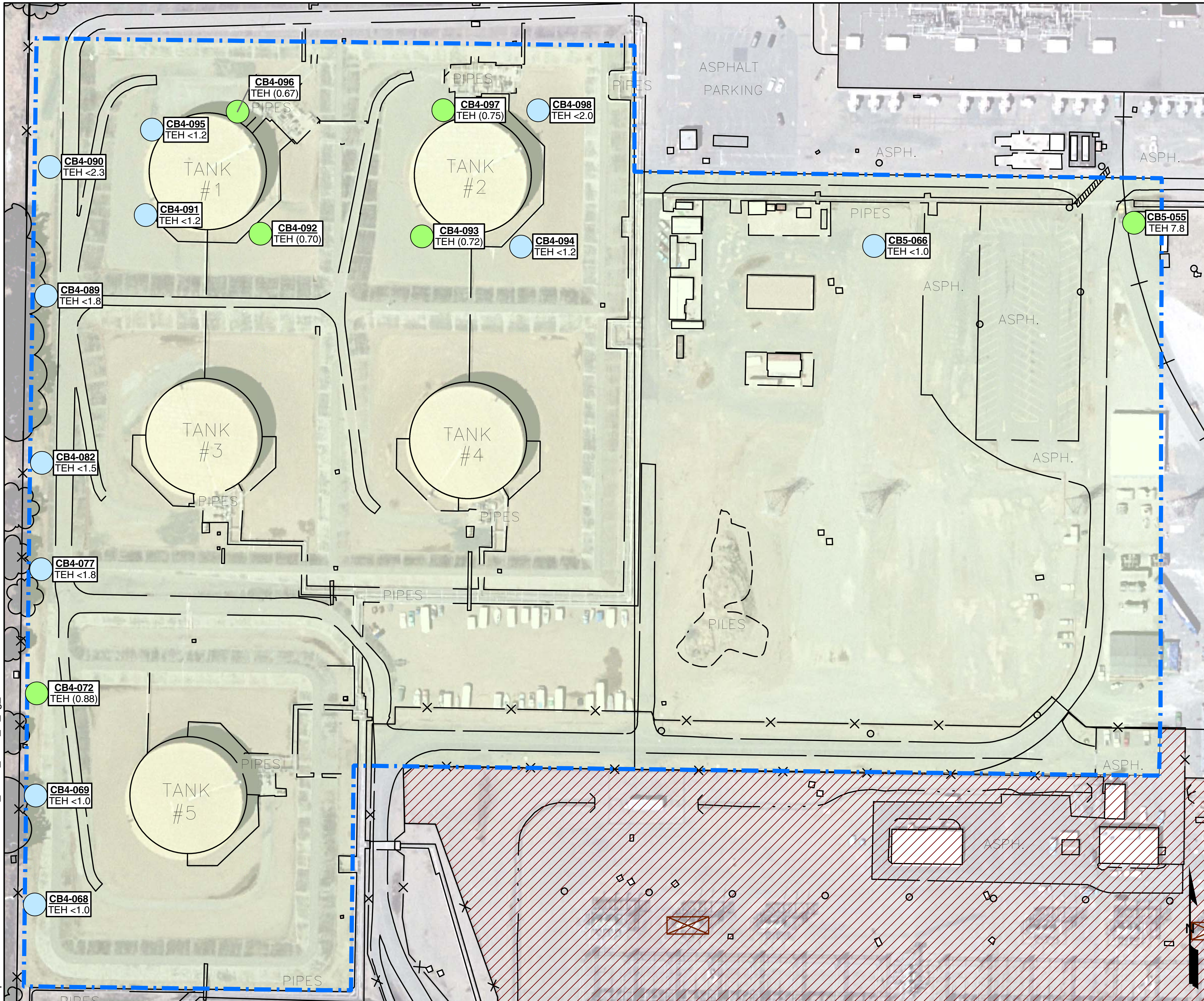
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

PETROLEUM HYDROCARBON
ANALYTICAL RESULTS IN SOIL
2.0 TO 4.5 FEET BGS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 6

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_06.mxd



Explanation

PG&E switchyard

Marsh Landing Generating Station project boundary (the site)

Reported oil-filled circuit breaker explosion site

Not detected

Up to 100 mg/kg

101 - 1000 mg/kg

>1000 mg/kg

CB5-028 ← Sample I.D.
TEH 140 ← Concentration in mg/kg

Notes:
TEH = total extractable hydrocarbons
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
BGS = below ground surface
mg/kg = milligrams per kilogram
( ) = detected concentration is less than reporting limit
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

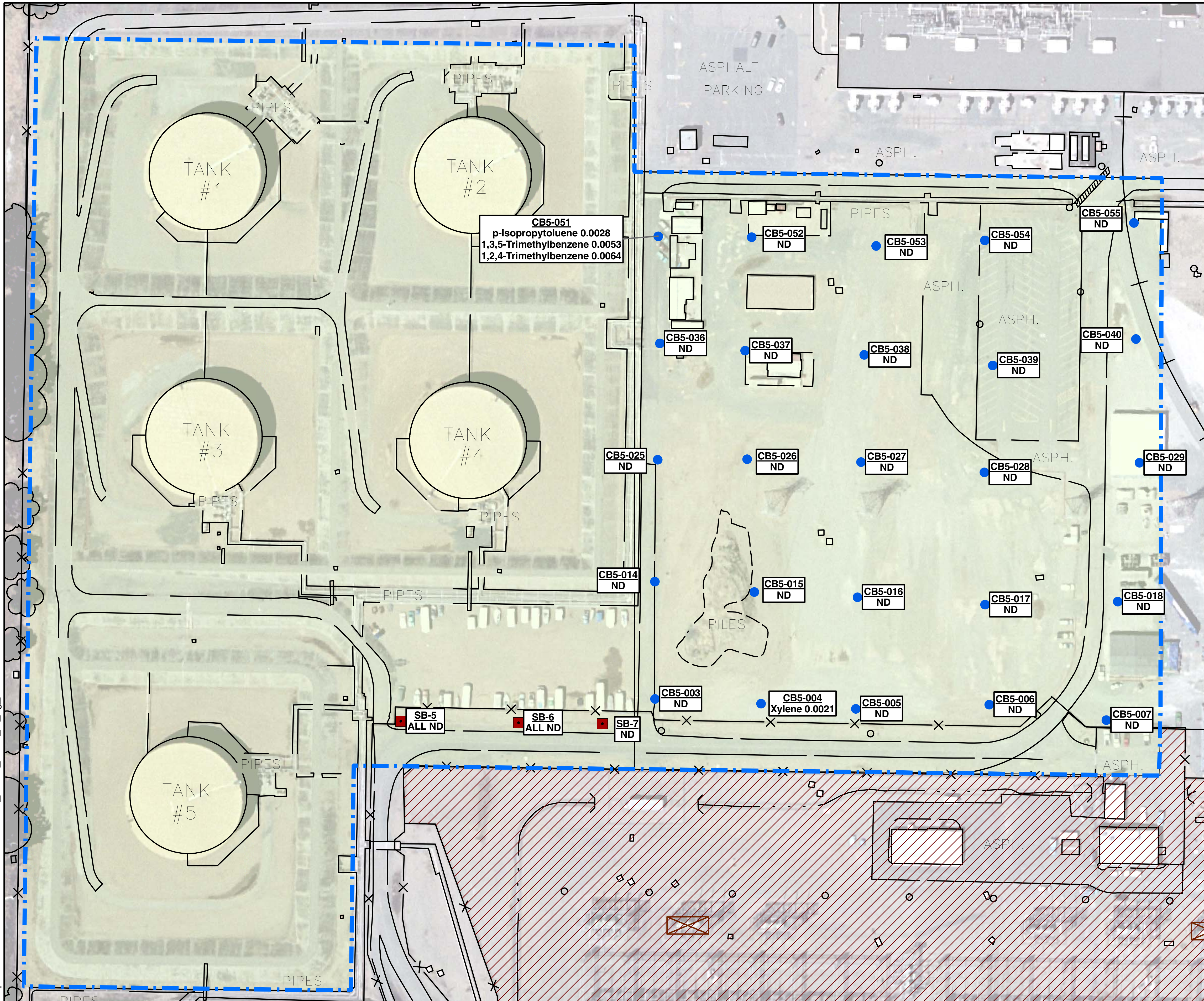
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

PETROLEUM HYDROCARBON
ANALYTICAL RESULTS IN SOIL
7.5 TO 11.5 FEET BGS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 7

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_07.mxd



Explanation

2009 sampling location

1997 sampling location

PG&E switchyard

Marsh Landing Generating Station project boundary (the site)

Reported oil-filled circuit breaker explosion site

CB5-004 Xylene 0.0021 — Sample I.D. / Concentration in mg/kg

Notes:

VOC = volatile organic compound

BGS = below ground surface

mg/kg = milligrams per kilogram

ND = no VOCs were detected

Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

Methylene chloride was detected at several locations, however, based on information in Fluor Daniel's 1998 Phase II Investigation Report, it was determined to be a laboratory contaminant.

N

0 120 240 Feet

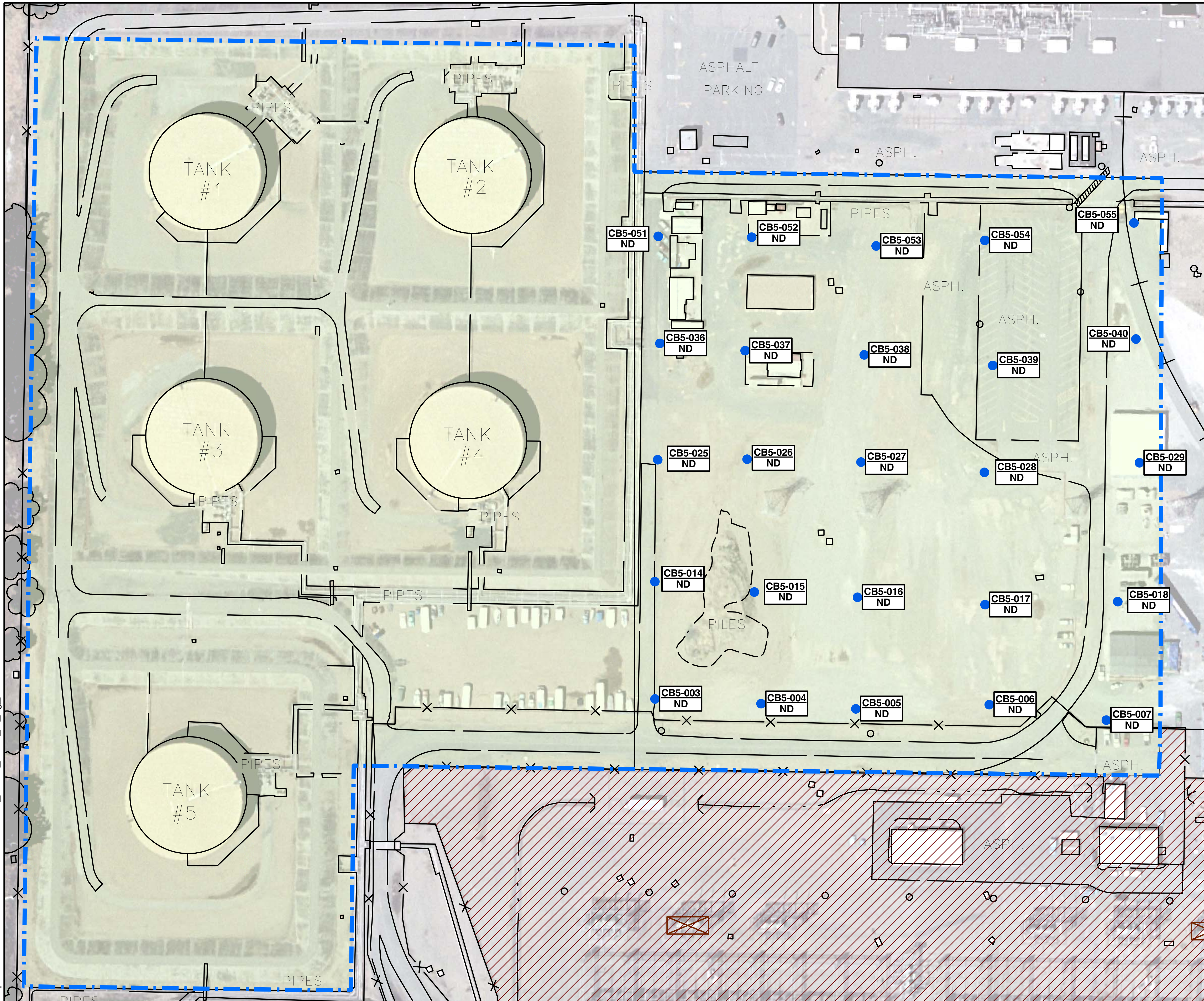
Aerial image from USGS digital orthophoto dated May 23, 2002.

VOC ANALYTICAL RESULTS IN SOIL
0.5 TO 2.0 FEET BGS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG | Date: 12/30/2009 | Project No. 15317.000

AMEC Geomatrix | Figure 8

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_08.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

CB5-025 ND — Sample I.D.; Concentration in mg/kg

Notes:

VOC = volatile organic compound

BGS = below ground surface

mg/kg = milligrams per kilogram

ND = no VOCs were detected

Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

Methylene chloride was detected at several locations, however, based on information in Fluor Daniel's 1998 Phase II Investigation Report, it was determined to be a laboratory contaminant.

N

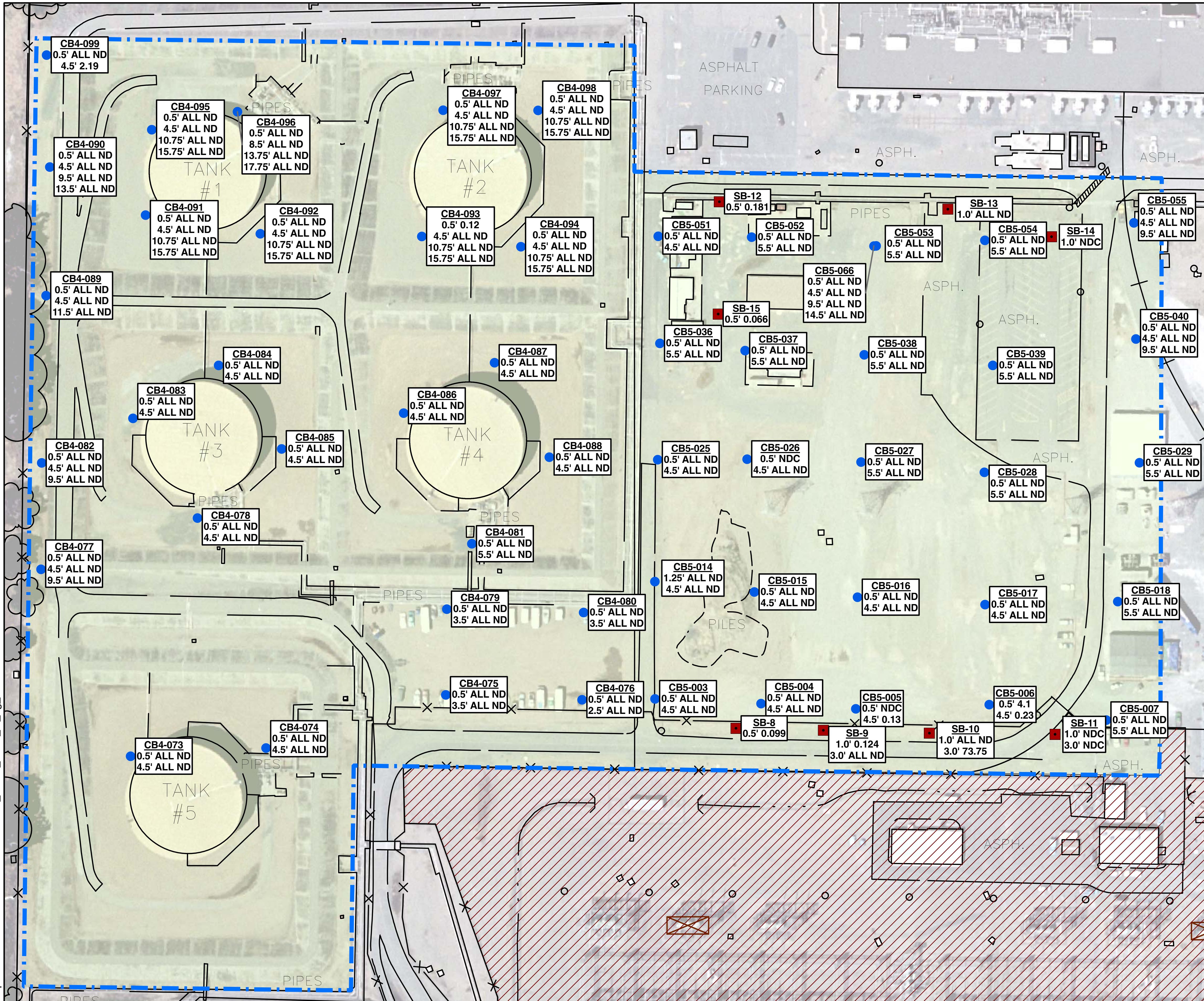
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

VOC ANALYTICAL RESULTS IN SOIL
4.5 TO 5.5 FEET BGS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 9

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_09.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

Sample Depth (feet bgs)	CB4-099 0.5' ALL ND 4.5' 2.19	Sample I.D. Benzo(a)pyrene TEQ in mg/kg

Notes:

ALL ND = no polyaromatic hydrocarbons were detected above laboratory reporting limits

NDC = no carcinogenic polyaromatic hydrocarbons were detected above laboratory reporting limits

BGS = below ground surface

mg/kg = milligrams per kilogram

TEQ = toxic equivalency factor

Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

N

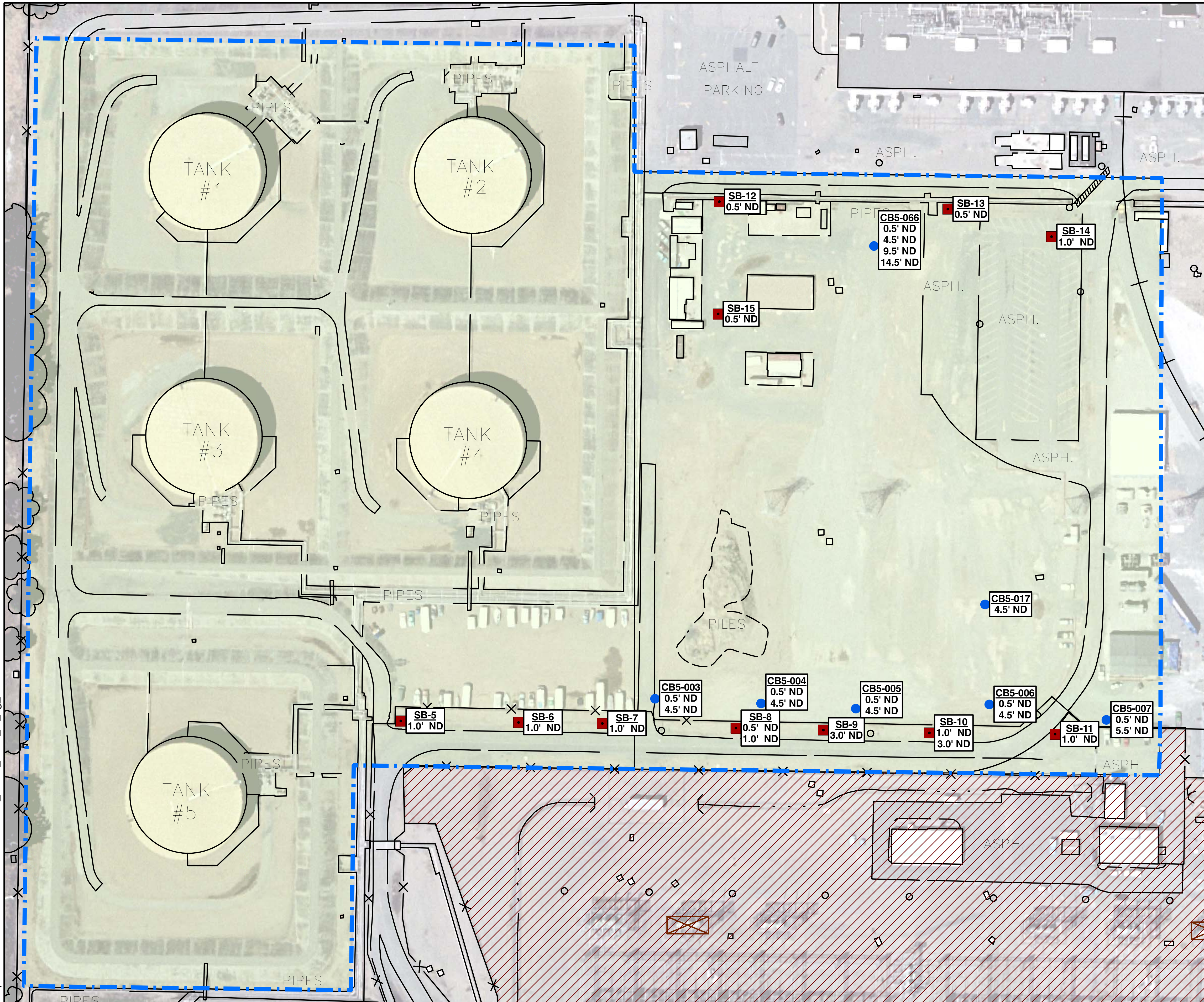
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

BENZO(A)PYRENE TEQs IN SOIL
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 10

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_10.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

Sample Depth (feet bgs)	CB5-004 0.5' ND 4.5' ND	Sample I.D. Concentration in mg/kg

Notes:
PCB = polychlorinated biphenyl
ND = no polychlorinated biphenyls were detected
bgs = below ground surface
mg/kg = milligrams per kilogram
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

N

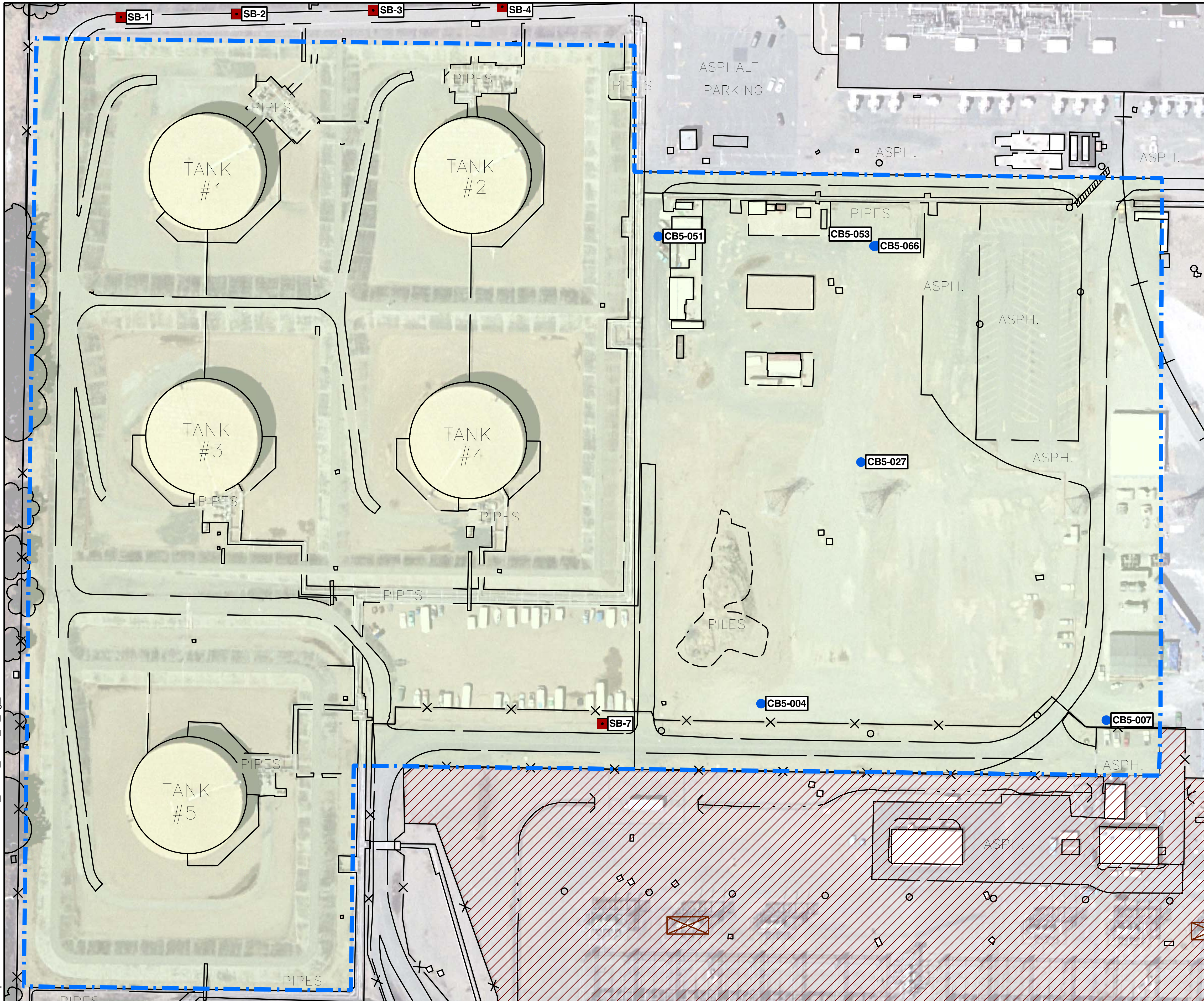
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

PCB ANALYTICAL RESULTS IN SOIL
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 11

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_11.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

N

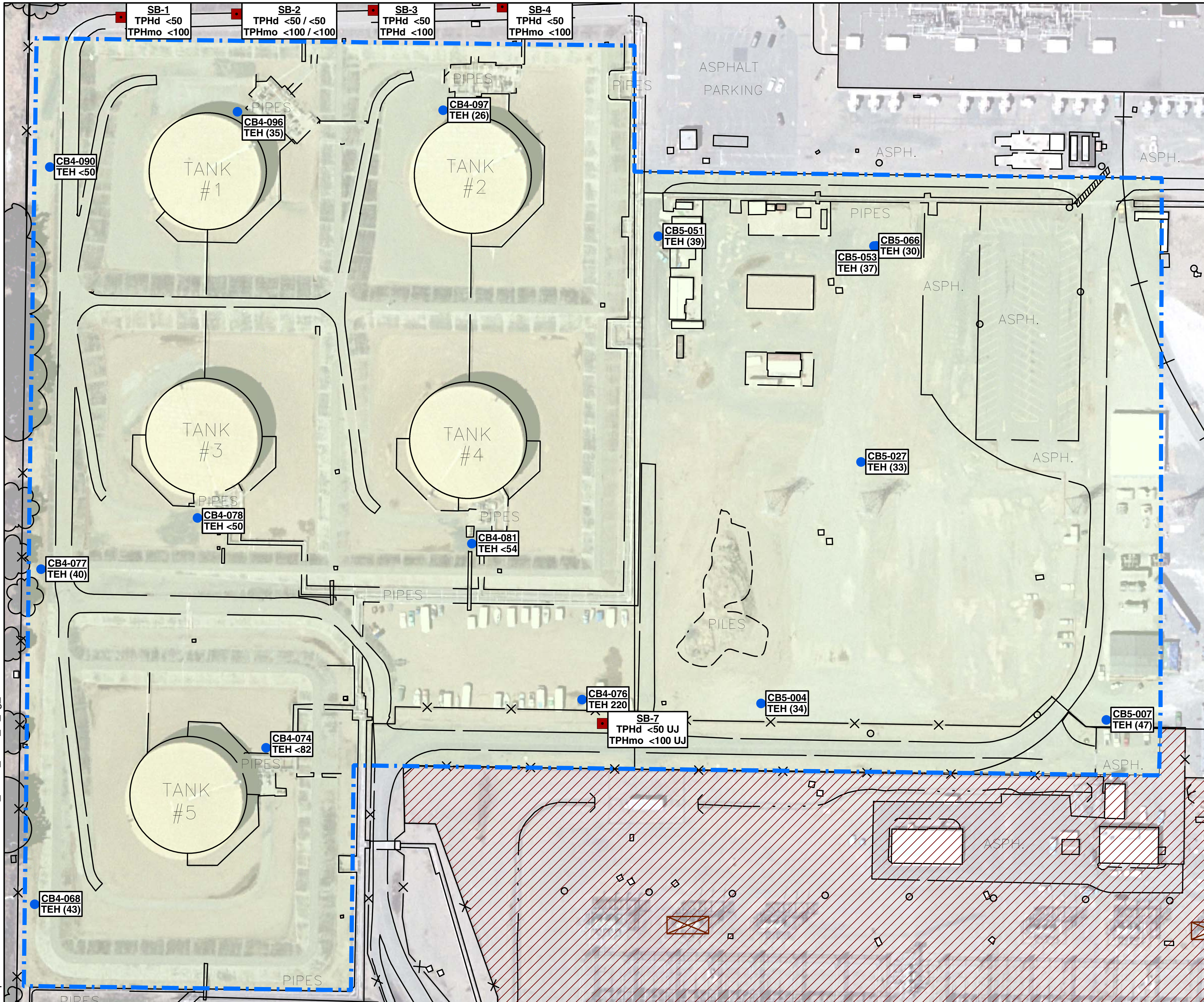
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

LOCATION WHERE METALS WERE ANALYZED IN GROUNDWATER
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 12

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_12.mxd



Explanation

2009 sampling location

1997 sampling location

PG&E switchyard

Marsh Landing Generating Station project boundary (the site)

Reported oil-filled circuit breaker explosion site

CB4-097 ← Sample I.D.
TEH (26) ← Concentration in µg/L

Notes:
TEH = total extractable hydrocarbons
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
µg/L = micrograms per liter
( ) = detected concentrations is less than reporting limit
/ = duplicate sample results
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

N

0 120 240 Feet

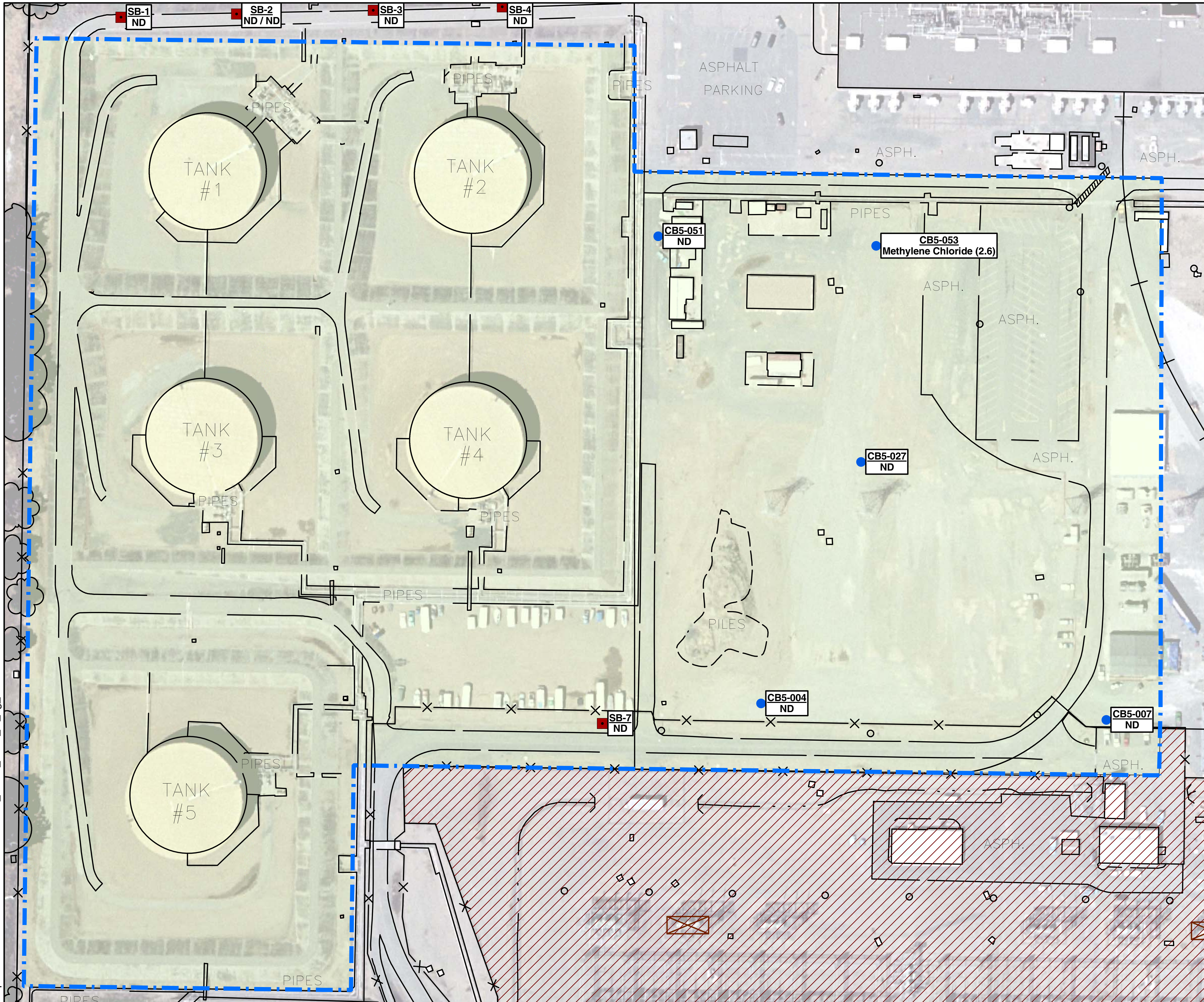
Aerial image from USGS digital orthophoto dated May 23, 2002.

PETROLEUM HYDROCARBON ANALYTICAL RESULTS IN GROUNDWATER
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG | Date: 1/29/2010 | Project No. 15317.000

AMEC Geomatrix | Figure 13

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_13.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

CB5-053
Methylene Chloride (2.60)
Sample I.D.
Concentration in µg/L

Notes:
VOC = volatile organic compound
ND = no VOCs were detected
µg/L = micrograms per liter
( ) = detected concentrations is less than reporting limit
/ = duplicate sample results
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

N

0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

VOC ANALYTICAL RESULTS IN GROUNDWATER
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 14

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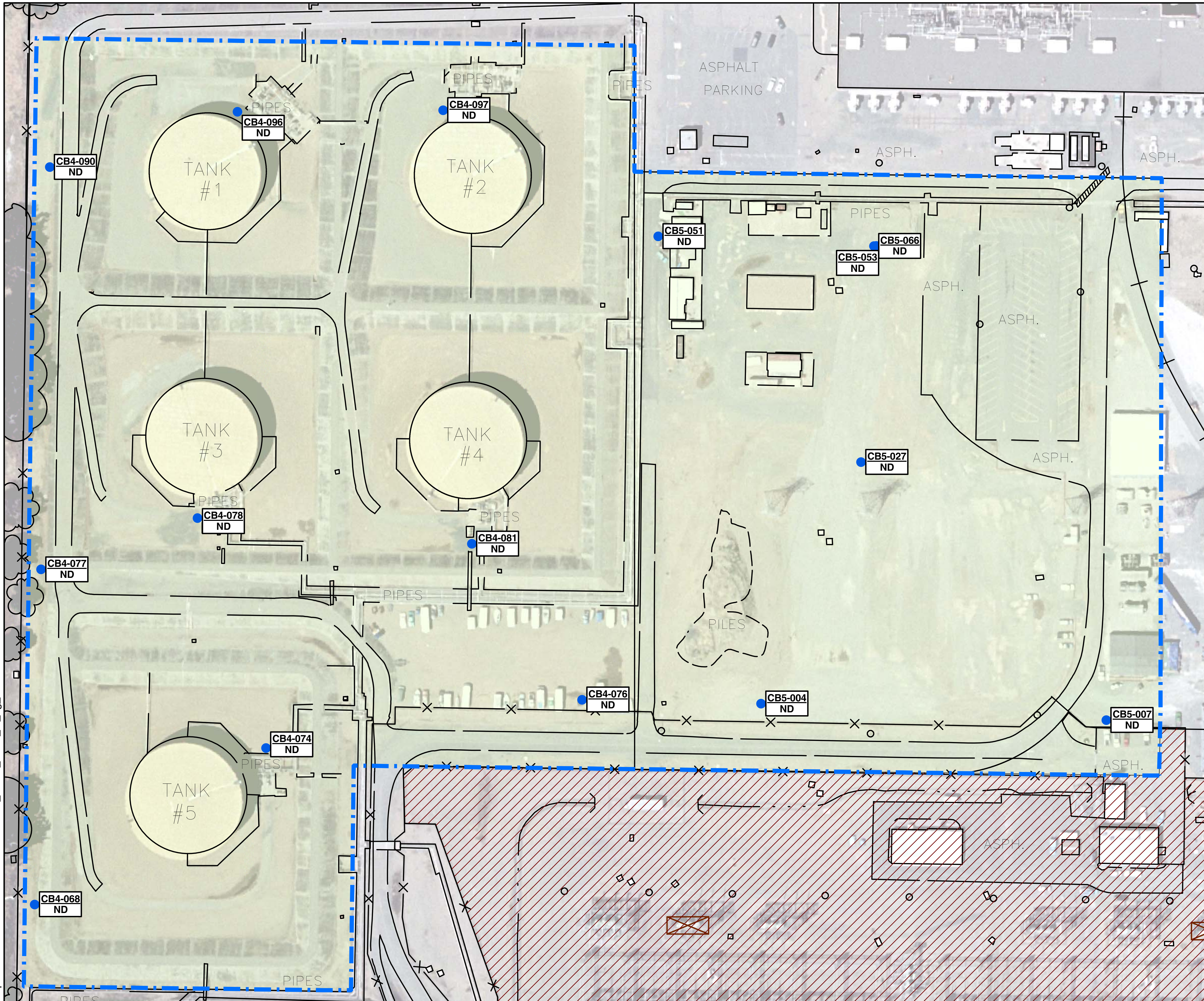


Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

CB5-004 — Sample I.D.
ND — Concentration in µg/L

Notes:
PAH = polyaromatic hydrocarbons
ND = no PAHs were detected
µg/L = micrograms per liter
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

N

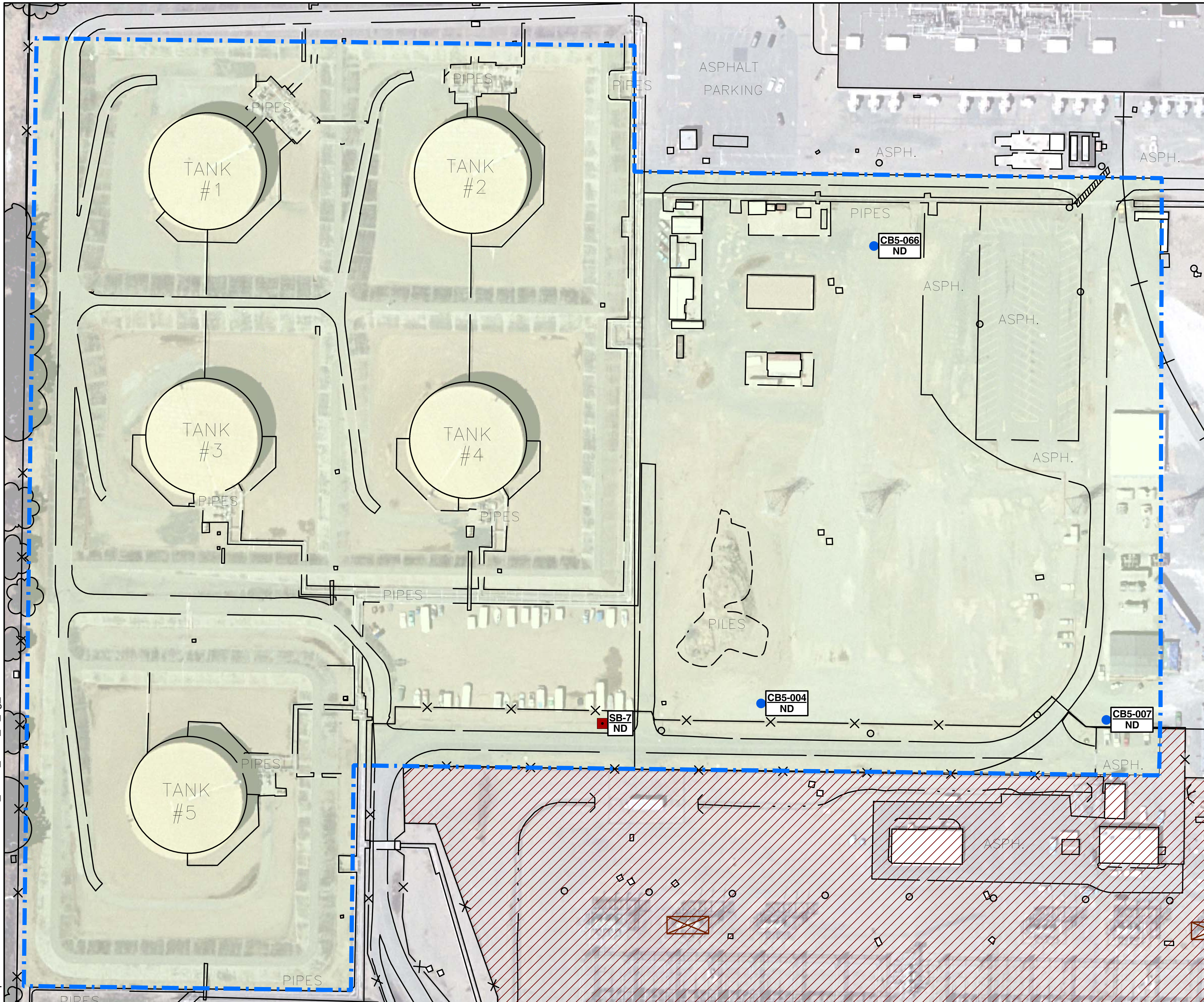
0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

PAH ANALYTICAL RESULTS IN GROUNDWATER
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 15

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_15.mxd



Explanation

- 2009 sampling location
- 1997 sampling location
- PG&E switchyard
- Marsh Landing Generating Station project boundary (the site)
- Reported oil-filled circuit breaker explosion site

CB5-004 — Sample I.D.
ND — Concentration in µg/L

Notes:
PAH = polyaromatic hydrocarbons
ND = no PAHs were detected
µg/L = micrograms per liter
Analytical results from 1997 were compiled from data tables in Fluor Daniel GTI June 1998 Phase II Environmental Site Assessment report; original data sheets were not available for review.

N

0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

PCB ANALYTICAL RESULTS IN GROUNDWATER
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 16

File path: S:\15300\15317\15317.000\task_04\09_1223_fi_fig_16.mxd

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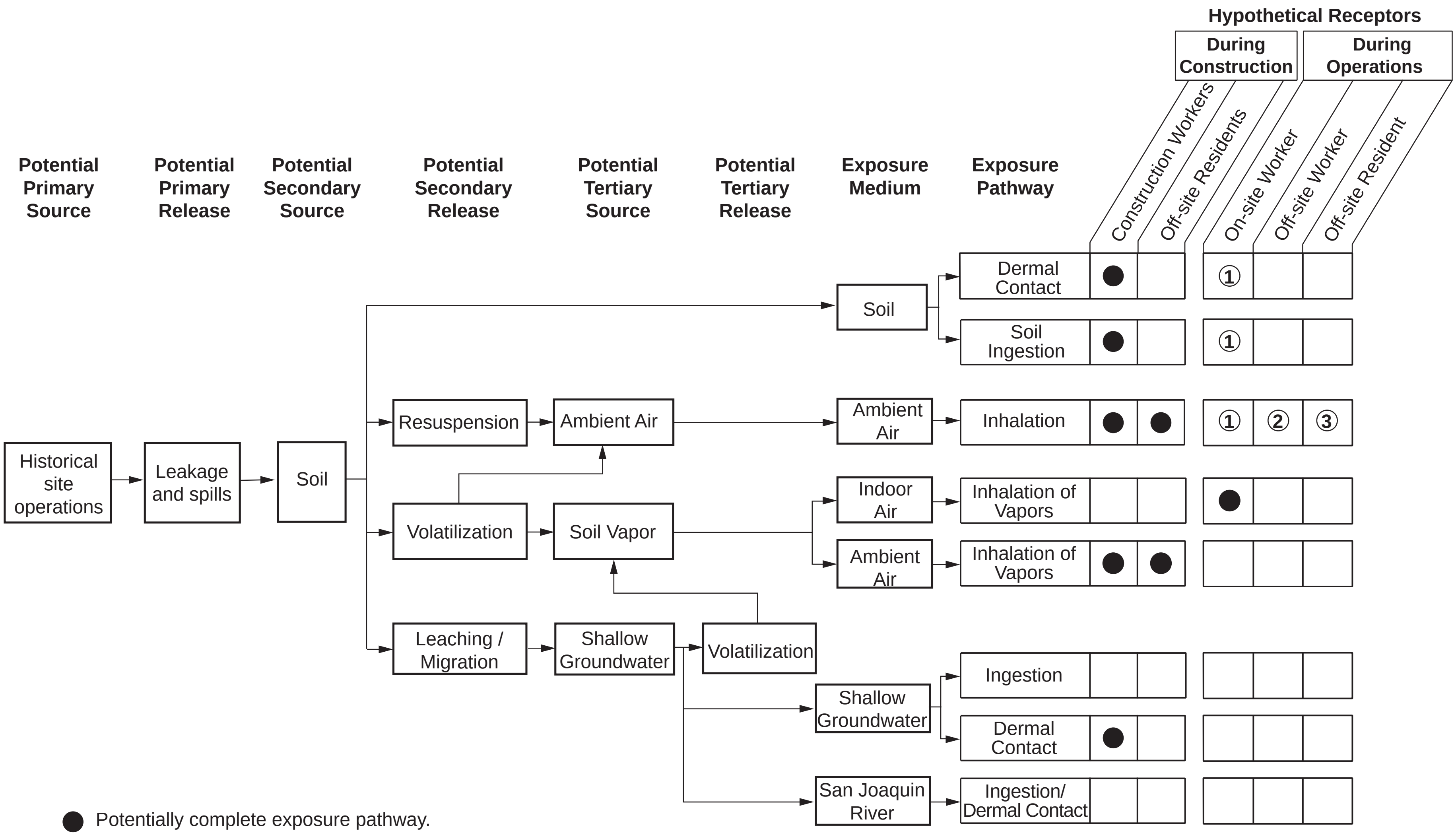


● Potentially complete exposure pathway.

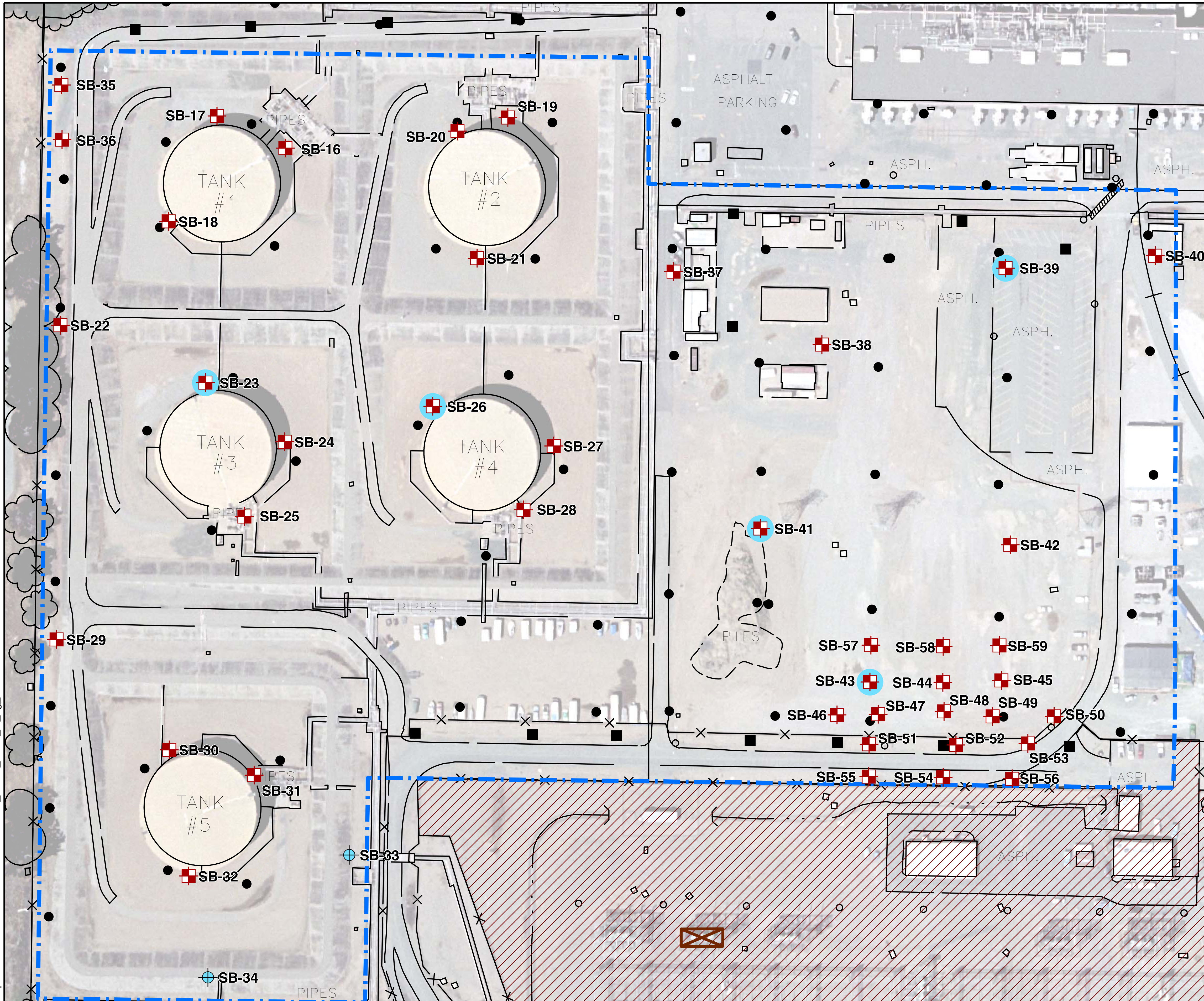
1. This pathway may not be complete once construction is finished because portions of the site may be paved and covered by buildings and equipment. However, potential exposure (assuming the site will not be covered) is evaluated.

2. This pathway is evaluated qualitatively because exposure during operations for off-site worker receptor is expected to be less than the on-site worker receptor for inhalation of particulates.

3. Potentially complete for the inhalation of particulates.

PRELIMINARY SITE CONCEPTUAL MODEL
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: PS	Date: 12/30/2009	Project No. 15317.000
AMEC Geomatrix		Figure 17



Explanation

- Proposed grab groundwater sampling location
- Proposed soil and grab groundwater sampling location
- Proposed soil sampling location
- 2009 sampling location
- 1997 sampling location
- Marsh Landing Generating Station project boundary
- PG&E switchyard
- Reported oil-filled circuit breaker explosion site

N

0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

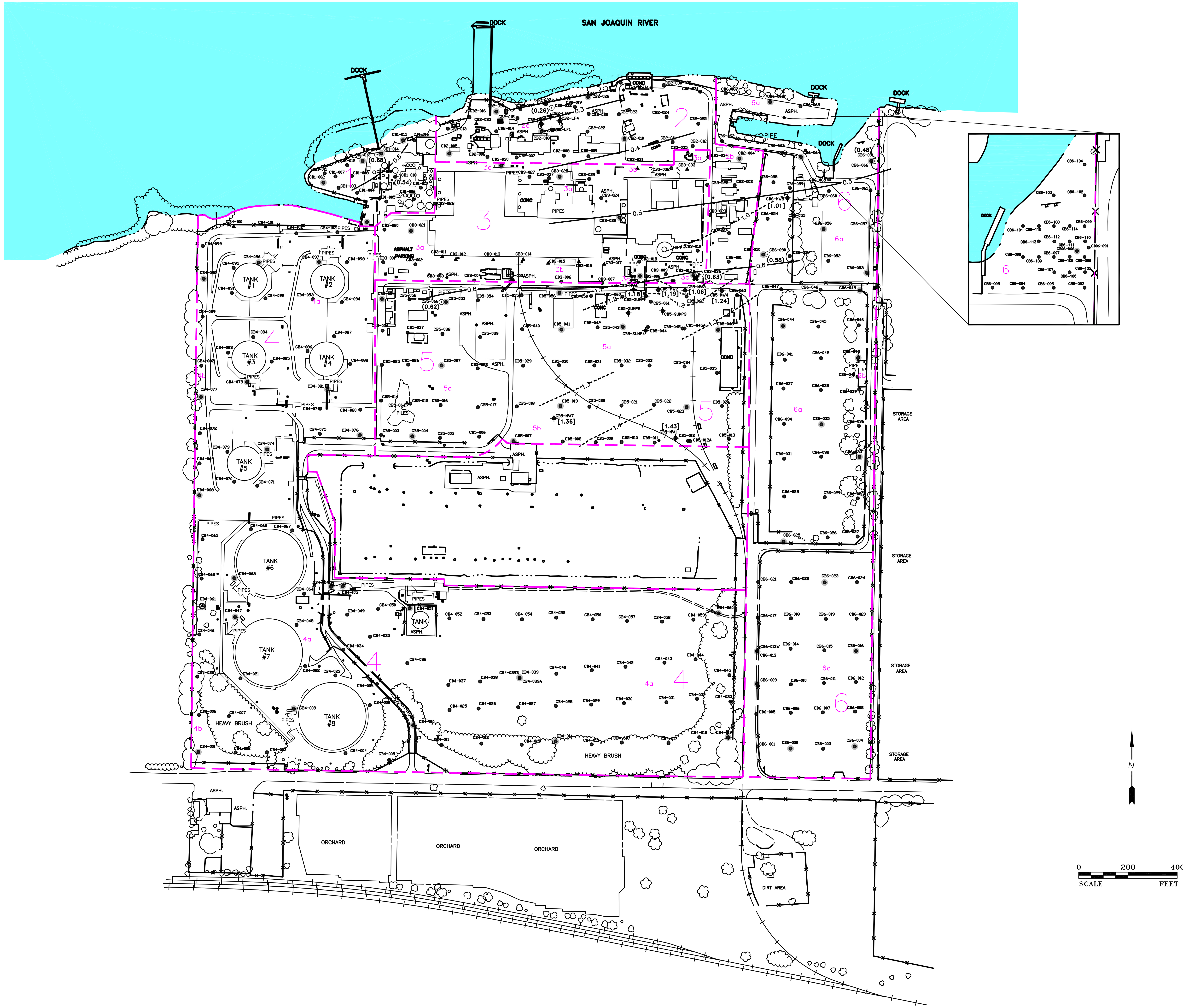
PROPOSED SAMPLING LOCATIONS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: JLP	Date: 3/9/2010	Project No. 15317.000
AMEC Geomatrix		Figure 18

File path: S:\15300\15317.000\task_04\09_1223_fi_fig_18.mxd

APPENDIX A

October 1997 Water Level Data and Potentiometric Surface Map



LEGEND

- 6 AREA DESIGNATION
- AREA BOUNDARY
- SOIL BORING/SAMPLE LOCATION
- SOIL BORING/GROUNDWATER SAMPLE LOCATION
- HAND AUGER/SAMPLE LOCATION
- EXISTING MONITORING WELL
- TEMPORARY MONITORING WELL
- ( ) GROUNDWATER ELEVATION (FEET ABOVE MSL) DATA FROM NEWLY INSTALLED WELLS
- GROUNDWATER SURFACE CONTOUR DATA FROM NEWLY INSTALLED WELLS
- [ ] GROUNDWATER ELEVATION (FEET ABOVE MSL) DATA FROM EXISTING WELLS
- GROUNDWATER SURFACE CONTOUR DATA FROM EXISTING WELLS

INVESTIGATION AREAS

1 PROCESS TREATMENT AND WASTE SURFACE IMPOUNDMENTS
2 OPERATION WAREHOUSING AND CONSTRUCTION YARDS
2a OPERATION WAREHOUSING
2b CONSTRUCTION YARDS
3 POWER PLANT UNITS 1–7
3a POWER PLANT UNITS 1–7
3b TRANSFORMER ROCK BLOTTER AREAS
3c GAS LINE CONDENSATE KNOCK-OUTS
4 TANK FARM AND IMPOUNDING BASINS
4a TANK FARM IMPOUNDING BASINS
4b GAYLORD BOUNDARY
5 PAINT YARD, LEACH MOUND AND FORMER IMPOUNDMENTS
5a PAINT YARD, LEACH MOUND AND FORMER IMPOUNDMENTS
5b SWITCHYARD BOUNDARY
6 RAW WATER CLARIFIER SLUDGE, SAND STORAGE AREA, EMPLOYEE RECREATION AREA, AND GAS REGULATOR STATION
6a RAW WATER CLARIFIER SLUDGE AND SAND STORAGE AREA
6b GAS REGULATOR STATION

FLUOR DANIEL GTI

PACIFIC GAS AND ELECTRIC COMPANY

CONTRA COSTA POWER PLANT
ANTIOCH, CALIFORNIA

PHASE II ENVIRONMENTAL SITE ASSESSMENT

GROUNDWATER CONTOUR MAP (12/11/97)

DESIGNED BY: BB	DRAWN BY: ML	CHECKED BY:
DATE: 4/23/98	FILE: P3-2	
PROJECT NO.: 020200350	CONTRACT:	
PLATE: 3–2		

Liquid Level Gauging Data
PG&E Contra Costa Power Plant

SITE	DATE	MP ELEVATION(2) (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV.(2) (feet)	△ WATER ELEV.(1) (feet)	EQUIV. FRESH WATER HEAD(2) (feet)
CB1-001	10/20/97	7.170	00:00	7.16	0.00	0.01	NA	0.01
CB1-002	10/20/97	9.650	00:00	9.52	0.00	0.13	NA	0.13
CB1-013	10/20/97	9.690	00:00	9.30	0.00	0.39	NA	0.39
CB1-014	10/20/97	6.170	00:00	6.85	0.00	-0.68	NA	-0.68
CB1-015	10/20/97	5.900	00:00	5.72	0.00	0.18	NA	0.18
CB1-017	12/11/97	5.300	12:53	4.62	0.00	0.68	NA	0.68
CB1-018	12/11/97	6.100	12:55	5.56	0.00	0.54	NA	0.54
CB2-004	10/20/97	8.150	00:00	7.13	0.00	1.02	NA	21.02
CB2-005	10/20/97	8.050	00:00	7.88	0.00	0.17	NA	0.17
CB2-010	10/20/97	8.240	00:00	7.05	0.00	1.19	NA	1.19
CB2-018	10/20/97	7.410	00:00	7.30	0.00	0.11	NA	0.11
CB2-026	10/20/97	6.620	00:00	6.40	0.00	0.22	NA	0.22
CB2-028	10/20/97	5.740	00:00	5.44	0.00	0.30	NA	0.30
CB2-032	12/11/97	4.790	12:58	4.53	0.00	0.26	NA	0.26
CB2-LF1	10/20/97	6.220	00:00	7.07	0.00	-0.85	NA	NA
CB2-LF1	12/11/97	6.220	13:01	4.37	0.00	1.85	2.70	NA
CB2-LF2	10/20/97	6.360	00:00	7.74	0.00	-1.38	NA	NA
CB2-LF2	12/11/97	6.360	13:03	7.39	0.00	-1.03	0.35	NA
CB2-LF3	10/20/97	6.090	00:00	6.65	0.00	-0.56	NA	NA
CB2-LF3	12/11/97	6.090	13:04	6.35	0.00	-0.26	0.30	NA

(1) Change in Water Elevation since last reported measurement D = Dry NA = Not Available
(2) Measurements Based on Mean Sea Level

Liquid Level Gauging Data
PG&E Contra Costa Power Plant

SITE	DATE	MP ELEVATION(2) (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV.(2) (feet)	△ WATER ELEV.(1) (feet)	EQUIV. FRESH WATER HEAD(2) (feet)
CB2-LF4	10/20/97	6.020	00:00	7.69	0.00	-1.67	NA	NA
CB2-LF4	12/11/97	6.020	13:06	7.46	0.00	-1.44	0.23	NA
CB3-005	10/20/97	8.430	00:00	8.05	0.00	0.38	NA	0.38
CB3-021	10/20/97	7.050	00:00	6.65	0.00	0.40	NA	0.40
CB3-022	10/20/97	7.720	00:00	7.59	0.00	0.13	NA	0.13
CB3-028	10/20/97	7.490	00:00	7.60	0.00	-0.11	NA	-0.11
CB3-030	10/20/97	7.830	00:00	7.82	0.00	0.01	NA	0.01
CB3-036	12/11/97	6.140	13:15	5.51	0.00	0.63	NA	0.63
CB4-001	10/16/97	11.060	00:00	10.30	0.00	0.76	NA	0.76
CB4-008	10/20/97	12.580	00:00	11.88	0.00	0.70	NA	0.70
CB4-010	10/16/97	11.020	00:00	10.42	0.00	0.60	NA	0.60
CB4-014	10/16/97	11.790	00:00	11.80	0.00	-0.01	NA	-0.01
CB4-019	10/16/97	11.090	00:00	10.04	0.00	1.05	NA	1.05
CB4-047	10/20/97	11.690	00:00	11.19	0.00	0.50	NA	0.50
CB4-060	10/16/97	7.880	00:00	6.95	0.00	0.93	NA	0.93
CB4-061	10/16/97	9.340	00:00	8.82	0.00	0.52	NA	0.52
CB4-063	10/20/97	11.540	00:00	11.21	0.00	0.33	NA	0.33
CB4-068	10/16/97	8.180	00:00	7.84	0.00	0.34	NA	0.34
CB4-074	10/20/97	9.470	00:00	9.06	0.00	0.41	NA	0.41

(1) Change in Water Elevation since last reported measurement — D = Dry — NA = Not Available

(2) Measurements Based on Mean Sea Level

SITE	DATE	MP ELEVATION(2) (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV.(2) (feet)	△ WATER ELEV.(1) (feet)	EQUIV. FRESH WATER HEAD(2) (feet)
CB4-076	10/16/97	5.700	00:00	5.39	0.00	0.31	NA	0.31
CB4-077	10/16/97	12.050	00:00	11.99	0.00	0.06	NA	0.06
CB4-090	10/16/97	17.430	00:00	17.62	0.00	-0.19	NA	-0.19
CB5-066	12/11/97	5.580	13:03	4.96	0.00	0.62	NA	0.62
CB5-MW1	10/21/97	8.220	00:00	7.51	0.00	0.71	NA	NA
CB5-MW1	12/11/97	8.220	12:55	6.79	0.00	1.43	0.72	NA
CB5-MW2	10/15/97	9.370	00:00	8.93	0.00	0.44	NA	NA
CB5-MW2	12/11/97	9.370	13:12	8.18	0.00	1.19	0.75	NA
CB5-MW3	10/15/97	8.880	00:00	8.37	0.00	0.51	NA	NA
CB5-MW3	12/11/97	8.880	13:08	7.82	0.00	1.06	0.55	NA
CB5-MW4	10/15/97	9.240	00:00	8.72	0.00	0.52	NA	NA
CB5-MW4	12/11/97	9.240	13:16	8.00	0.00	1.24	0.72	NA
CB5-MW6	10/21/97	9.380	00:00	8.97	0.00	0.41	NA	NA
CB5-MW6	12/11/97	9.380	13:14	8.20	0.00	1.18	0.77	NA
CB5-MW7	10/21/97	6.790	00:00	6.22	0.00	0.57	NA	NA
CB5-MW7	12/11/97	6.790	12:58	5.43	0.00	1.36	0.79	NA
CB5-SUMP1	12/11/97	7.510	13:11	5.96	0.00	1.55	NA	NA
CB5-SUMP2	12/11/97	8.460	13:13	7.01	0.00	1.45	NA	NA
CB5-SUMP3	12/11/97	9.430	13:16	7.99	0.00	1.44	NA	NA
CB5-SUMP4	12/11/97	9.230	13:14	7.73	0.00	1.50	NA	NA
CB6-002	10/16/97	9.540	00:00	8.48	0.00	1.06	NA	1.06

(1) Change in Water Elevation since last reported measurement   D = Dry   NA = Not Available

(2) Measurements Based on Mean Sea Level

Liquid Level Gauging Data
PG&E Contra Costa Power Plant

SITE	DATE	MP ELEVATION(2) (feet)	TIME	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	WATER ELEV.(2) (feet)	△ WATER ELEV.(1) (feet)	EQUIV. FRESH WATER HEAD(2) (feet)
CB6-004	10/16/97	12.030	00:00	10.81	0.00	1.22	NA	1.22
CB6-009	10/16/97	9.580	00:00	8.53	0.00	1.05	NA	1.05
CB6-013	10/16/97	9.830	00:00	8.84	0.00	0.99	NA	0.99
CB6-016	10/16/97	9.410	00:00	8.30	0.00	1.11	NA	1.11
CB6-023	10/16/97	9.070	00:00	6.52	0.00	2.55	NA	2.55
CB6-035	10/16/97	19.040	00:00	24.81	0.00	-5.77	NA	-5.77
CB6-043	10/16/97	7.180	00:00	6.53	0.00	0.65	NA	0.65
CB6-044	10/16/97	18.660	00:00	18.15	0.00	0.51	NA	0.51
CB6-050	10/16/97	5.930	00:00	7.15	0.00	-1.22	NA	-1.22
CB6-056	10/16/97	6.190	00:00	6.89	0.00	-0.70	NA	-0.70
CB6-066	10/16/97	5.370	00:00	6.64	0.00	-1.27	NA	-1.27
CB6-068	10/16/97	6.830	00:00	7.36	0.00	-0.53	NA	-0.53
CB6-090	12/11/97	5.780	13:08	5.20	0.00	0.58	NA	0.58
CB6-091	12/11/97	7.610	12:59	7.13	0.00	0.48	NA	0.48
CB6-MW5	10/21/97	6.120	00:00	5.80	0.00	0.32	NA	NA
CB6-MW5	12/11/97	6.120	13:25	5.11	0.00	1.01	0.69	NA

(1) Change in Water Elevation since last reported measurement
(2) Measurements Based on Mean Sea Level

D = Dry NA = Not Available

APPENDIX B

Analytical Laboratory Reports and Chain-of-Custody Records – AMEC 2009 Investigation

Q16665 16705

CHAIN-OF-CUSTODY RECORD

PROJECT NAME: MARSH LANDING

PROJECT NUMBER: 15317.000

RESULTS TO: jonathan.skaggs@amec; heidi.dietrich@amec.com

TURNAROUND TIME: 4 DAY

SAMPLE SHIPMENT METHOD: FED EX

LABORATORY NAME: Creek Environmental

LABORATORY ADDRESS: San Luis Obispo, CA

LABORATORY CONTACT: Judy

LABORATORY PHONE NUMBER:

CLIENT INFORMATION:

DATE: 12/14/09 PAGE 1 OF 1

REPORTING REQUIREMENTS:

GEOTRACKER REQUIRED YES NO

SITE SPECIFIC GLOBAL ID NO.

SAMPLERS (SIGNATURE):

ANALYSES

DATE	TIME	SAMPLE NUMBER	TPHd with silica gel	TPHmo with silica gel	VOCs by 8260B	Title 22 Metals 6010	Mercury 7471A	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
12/14/09	1135	SB-4-GW	X	X				1 L Amber	W	N	None	Y	N	1	A 18362
						X	X	250 mL POLY	W	Y	HNO_3	Y	N	1	B
					X			40mL VOA	W	N	HCl	Y	N	3	C, D, E

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
SIGNATURE: PRINTED NAME: Tiffany Klitzke COMPANY: AMEC Geomatrix	12/14/09	1800	SIGNATURE: Kathy Wensloff PRINTED NAME: Kathy Wensloff COMPANY: Creek Env Labs	12/15/09	11:30
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		

TOTAL NUMBER OF CONTAINERS: 5

SAMPLING COMMENTS: Please email results to jonathan.skaggs@amec.com and Heidi.dietrich@amec.com.

Custody Seal opened 12/15/09 10:36 KEW

Temp. 1.0

amec

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A Minority-owned Business Enterprise
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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18362
Order: Q6665
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-4-GW	Tiffany Klitzke	12/14/09@11:35	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batc
Mercury	Not Detected	0.0005	1	mg/L	EPA 7470	12/18/09	12/18/09	486
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	12/21/09	12/16/09	490
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	12/21/09	12/16/09	490
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	12/21/09		4905
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18362
Order: Q6665
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-4-GW	Tiffany Klitzke	12/14/09@11:35	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batc
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	12/21/09		490!
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
trans-1,2-Dichloethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490!
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Log Number: 09-C18362
Order: Q6665
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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-4-GW	Tiffany Klitzke	12/14/09@11:35	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		490
Antimony	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Arsenic	0.021	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Barium	0.015	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Beryllium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Cadmium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Chromium	0.026	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Cobalt	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Copper	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Lead	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Molybdenum	0.017	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Nickel	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Selenium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Silver	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Thallium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Vanadium	0.068	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	489
Zinc	Not Detected	0.08	1	mg/L	EPA 6020	12/21/09	12/18/09	489

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18362
Order: Q6665
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-4-GW	Tiffany Klitzke	12/14/09@11:35	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Quality Control Results

Order No.: Q6665
Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
Mercury	EPA 7470	< 0.0005	mg/L	4864
TPH as Diesel, SGT	EPA 8015/LUFT	< 0.05	mg/L	4908
TPH as Motor Oil, SGT	EPA 8015/LUFT	< 0.1	mg/L	4908
Benzene	EPA 8260	< 0.5	ug/L	4905
Toluene	EPA 8260	< 0.5	ug/L	4905
Ethylbenzene	EPA 8260	< 0.5	ug/L	4905
m,p-Xylene	EPA 8260	< 0.5	ug/L	4905
o-Xylene	EPA 8260	< 0.5	ug/L	4905
Methyl t-Butyl Ether (MTBE)	EPA 8260	< 0.5	ug/L	4905
Chlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,2-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,3-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,4-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,2-Dichloroethane (EDC)	EPA 8260	< 0.5	ug/L	4905
1,2-Dibromoethane (EDB)	EPA 8260	< 0.5	ug/L	4905
Bromobenzene	EPA 8260	< 0.5	ug/L	4905
Bromochloromethane	EPA 8260	< 0.5	ug/L	4905
Bromodichloromethane	EPA 8260	< 0.5	ug/L	4905
Bromoform	EPA 8260	< 0.5	ug/L	4905
Bromomethane	EPA 8260	< 0.5	ug/L	4905
n-Butylbenzene	EPA 8260	< 0.5	ug/L	4905
sec-Butyl Benzene	EPA 8260	< 0.5	ug/L	4905
t-Butylbenzene	EPA 8260	< 0.5	ug/L	4905
Carbon Tetrachloride	EPA 8260	< 0.5	ug/L	4905
Chloroethane	EPA 8260	< 0.5	ug/L	4905
2-Chloroethylvinyl ether	EPA 8260	< 20	ug/L	4905
Chloroform	EPA 8260	< 0.5	ug/L	4905
Chloromethane	EPA 8260	< 0.5	ug/L	4905
2-Chlorotoluene	EPA 8260	< 0.5	ug/L	4905
4-Chlorotoluene	EPA 8260	< 0.5	ug/L	4905
1,2-Dibromo-3-Chloropropane	EPA 8260	< 1	ug/L	4905
Dibromochloromethane	EPA 8260	< 0.5	ug/L	4905
Dibromomethane	EPA 8260	< 0.5	ug/L	4905
Dichlorodifluoromethane	EPA 8260	< 0.5	ug/L	4905
1,1-Dichloroethane	EPA 8260	< 0.5	ug/L	4905
1,1-Dichloroethene	EPA 8260	< 0.5	ug/L	4905
cis-1,2-Dichloroethene	EPA 8260	< 0.5	ug/L	4905
trans-1,2-Dichloethene	EPA 8260	< 0.5	ug/L	4905
1,2-Dichloropropane	EPA 8260	< 0.5	ug/L	4905
1,3-Dichloropropane	EPA 8260	< 0.5	ug/L	4905
2,2-Dichloropropane	EPA 8260	< 0.5	ug/L	4905
1,1-Dichloropropene	EPA 8260	< 0.5	ug/L	4905
cis-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	4905
trans-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	4905
Hexachlorobutadiene	EPA 8260	< 0.5	ug/L	4905

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Order No.: Q6665

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
Isopropylbenzene	EPA 8260	< 0.5	ug/L	4905
4-Isopropyltoluene	EPA 8260	< 0.5	ug/L	4905
Methylene Chloride	EPA 8260	< 5	ug/L	4905
Naphthalene	EPA 8260	< 5	ug/L	4905
n-Propylbenzene	EPA 8260	< 0.5	ug/L	4905
Styrene	EPA 8260	< 0.5	ug/L	4905
1,1,1,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	4905
1,1,2,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	4905
Tetrachloroethene	EPA 8260	< 0.5	ug/L	4905
1,2,3-Trichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,2,4-Trichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,1,1-Trichloroethane	EPA 8260	< 0.5	ug/L	4905
1,1,2-Trichloroethane	EPA 8260	< 0.5	ug/L	4905
Trichloroethene	EPA 8260	< 0.5	ug/L	4905
Trichlorofluoromethane	EPA 8260	< 0.5	ug/L	4905
1,2,3-Trichloropropane	EPA 8260	< 0.5	ug/L	4905
1,2,4-Trimethylbenzene	EPA 8260	< 0.5	ug/L	4905
1,3,5-Trimethylbenzene	EPA 8260	< 0.5	ug/L	4905
Vinyl Chloride	EPA 8260	< 0.5	ug/L	4905
Antimony	EPA 6020	< 0.008	mg/L	4899
Arsenic	EPA 6020	< 0.008	mg/L	4899
Barium	EPA 6020	< 0.008	mg/L	4899
Beryllium	EPA 6020	< 0.008	mg/L	4899
Cadmium	EPA 6020	< 0.008	mg/L	4899
Chromium	EPA 6020	< 0.008	mg/L	4899
Cobalt	EPA 6020	< 0.008	mg/L	4899
Copper	EPA 6020	< 0.008	mg/L	4899
Lead	EPA 6020	< 0.008	mg/L	4899
Molybdenum	EPA 6020	< 0.008	mg/L	4899
Nickel	EPA 6020	< 0.008	mg/L	4899
Selenium	EPA 6020	< 0.008	mg/L	4899
Silver	EPA 6020	< 0.008	mg/L	4899
Thallium	EPA 6020	< 0.008	mg/L	4899
Vanadium	EPA 6020	< 0.008	mg/L	4899
Zinc	EPA 6020	< 0.08	mg/L	4899

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Mercury	EPA 7470	104%	0.0050	mg/L	70 - 130	4864
TPH as Diesel, SGT	EPA 8015/LUFT	71%	5.0	mg/L	50 - 150	4908
Benzene	EPA 8260	106%	10	ug/L	80 - 120	4905
Toluene	EPA 8260	109%	10	ug/L	80 - 120	4905

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Quality Control Results

Order No.: Q6665

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Chlorobenzene	EPA 8260	108%	10	ug/L	81 - 115	4905
1,1-Dichloroethene	EPA 8260	103%	10	ug/L	63 - 129	4905
Trichloroethene	EPA 8260	107%	10	ug/L	77 - 117	4905
Antimony	EPA 6020	122%	1.0	mg/L	70 - 130	4899
Arsenic	EPA 6020	96%	1.0	mg/L	70 - 130	4899
Barium	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Beryllium	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Cadmium	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Chromium	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Cobalt	EPA 6020	106%	1.0	mg/L	75 - 125	4899
Copper	EPA 6020	107%	1.0	mg/L	75 - 125	4899
Lead	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Molybdenum	EPA 6020	97%	1.0	mg/L	75 - 125	4899
Nickel	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Selenium	EPA 6020	106%	4.0	mg/L	70 - 130	4899
Silver	EPA 6020	102%	1.0	mg/L	70 - 130	4899
Thallium	EPA 6020	103%	1.0	mg/L	70 - 130	4899
Vanadium	EPA 6020	103%	1.0	mg/L	75 - 125	4899
Zinc	EPA 6020	108%	1.0	mg/L	75 - 125	4899

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Mercury	EPA 7470	100%	98%	2	09-C18480	0.0050	mg/L	70 - 130	20	4864
Benzene	EPA 8260	104%	97%	7	09-C18478	10	ug/L	80 - 120	20	4905
Toluene	EPA 8260	106%	98%	8	09-C18478	10	ug/L	80 - 120	20	4905
Chlorobenzene	EPA 8260	107%	98%	9	09-C18478	10	ug/L	74 - 131	20	4905
1,1-Dichloroethene	EPA 8260	104%	97%	7	09-C18478	10	ug/L	59 - 145	20	4905
Trichloroethene	EPA 8260	107%	97%	10	09-C18478	10	ug/L	69 - 133	20	4905
Antimony	EPA 6020	106%	121%	13	09-C18479	1.0	mg/L	70 - 130	20	4899
Arsenic	EPA 6020	103%	102%	1	09-C18479	1.0	mg/L	70 - 130	20	4899
Barium	EPA 6020	82%	99%	18	09-C18479	1.0	mg/L	75 - 125	20	4899
Beryllium	EPA 6020	85%	97%	13	09-C18479	1.0	mg/L	75 - 125	20	4899
Cadmium	EPA 6020	103%	102%	1	09-C18479	1.0	mg/L	75 - 125	20	4899
Chromium	EPA 6020	86%	100%	15	09-C18479	1.0	mg/L	75 - 125	20	4899
Cobalt	EPA 6020	91%	102%	11	09-C18479	1.0	mg/L	75 - 125	20	4899
Copper	EPA 6020	96%	100%	4	09-C18479	1.0	mg/L	75 - 125	20	4899
Lead	EPA 6020	89%	103%	15	09-C18479	1.0	mg/L	75 - 125	20	4899
Molybdenum	EPA 6020	92%	99%	7	09-C18479	1.0	mg/L	75 - 125	20	4899
Nickel	EPA 6020	91%	101%	11	09-C18479	1.0	mg/L	75 - 125	20	4899
Selenium	EPA 6020	100%	109%	8	09-C18479	4.0	mg/L	70 - 130	20	4899
Silver	EPA 6020	91%	99%	9	09-C18479	1.0	mg/L	70 - 130	20	4899
Thallium	EPA 6020	90%	101%	11	09-C18479	1.0	mg/L	70 - 130	20	4899

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Quality Control Results

Order No.: Q6665

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Vanadium	EPA 6020	95%	99%	4	09-C18479	1.0	mg/L	75 - 125	20	4899
Zinc	EPA 6020	94%	106%	12	09-C18479	1.0	mg/L	75 - 125	20	4899

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
TPH as Diesel, SGT	EPA 8015/LUFT	kv:LCS	3.5	3.5	1	mg/L	30.	4908

CHAIN-OF-CUSTODY RECORD

Q6666 16707

PROJECT NAME: MARSH LANDING

PROJECT NUMBER: 15317.000

RESULTS TO: jonathan.skaggs@amec.com; heidi.dietrich@amec.com

TURNAROUND TIME: 4 DAY

SAMPLE SHIPMENT METHOD: Fed Ex

LABORATORY NAME: Creek Env. Laboratory

LABORATORY ADDRESS: San Luis Obispo

LABORATORY CONTACT: Judy

LABORATORY PHONE NUMBER:

CLIENT INFORMATION:

DATE: 12/14/09 PAGE 1 OF 1

REPORTING REQUIREMENTS:

GEOTRACKER REQUIRED YES NO

SITE SPECIFIC GLOBAL ID NO.

SAMPLERS (SIGNATURE):

ANALYSES

DATE	TIME	SAMPLE NUMBER	TPH diesel 8015M	TPH motor oil 8015M	Silica Gel Cleanup	PAHs 8270C SIM	PCBs 8082 (X)	Title 22 Metals 6010	Mercury 7471A	VOCs by 8260B	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
12/14/09	1420	SB-12-0.5	X	X	X	X	X	X	X									
	1425	SB-13-0.5	X	X	X	X	X	X	X		6-inch liner	S	N	None	Y	N	1	18363
	1430	SB-15-0.5	X	X	X	X	X	X	X								1	18364
	1455	SB-14-1.0	X	X	X	X	X	X	X								1	18365
	1530	SB-9-1.0	X	X	X	X	X										1	18366
	1540	SB-9-3.0				X	O										1	18367
	1540	SB-5-1.0	X	X	X		X	X	X								1	18368
										X	6-inch liner						1	A 18369
	1550	SB-5-2.0	X	X	X		X	X	X		40 mL VOA	S		~~MeOH NaHSO4~~			3	MeOH + NaHSO4 B, C, D
										X	6-inch liner	S		None			1	A 18370
	1605	SB-6-1.0	X	X	X		O	X	X		40 mL VOA	S		~~MeOH NaHSO4~~			3	MeOH + NaHSO4 B, C, D
		~~SB-6-2.0~~								X	6-inch liner	S		None			1	A 18371
	1615	SB-6-2.0	X	X	X		X	X	X	X	40 mL VOA	S		~~MeOH NaHSO4~~			3	MeOH + NaHSO4 B, C, D
	1605	SB-10-1.0	X	X	X	X	X				6 inch liner + 40 mL VOAs	S	N	See comment	Y	N	4	Liner - unpreserved 40As MeOH + NaHSO4 18372 liner A VOA's B, C, D
	1615	SB-10-3.0				X	O				6-inch liner	S	N	None	Y	N	1	18373
											6-inch liner	S	N	None	Y	N	1	18374

TOTAL NUMBER OF CONTAINERS: 24

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
SIGNATURE: PRINTED NAME: Tiffany Klitzke COMPANY: Amec Geomatrix	12/14/09	1800	SIGNATURE: Kathy Wensloff PRINTED NAME: Kathy Wensloff COMPANY: Creek Env. Labs	12/15/09	11:30
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		

SAMPLING COMMENTS: For each sample, split a portion of the sample and place on HOLD for TPH Fractionation analysis. If analyzed, report TPH Fractionation in a separate lab report.

(X) Report PCB's on Dry Wt. @ 12/15

Temp. 1.0

Custody Seal Opened 12/15/09 10:36 KEW

amec

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Date: December 22, 2009

CASE NARRATIVE Q6666

Client: **Amec Geomatrix**
Project: **PG&E Marsh Landing**
Sample(s): **09-C18363 to 09-C18374**
Sampled: **12/14/09** **Received: 12/15/09**

Samples 09-C18363 to 09-C18374 were received at the laboratory at 1.0 °C with no anomaly except for the following remarks:

- PCBs analysis was subcontracted to American Scientific Laboratories.

Diesel range (C10-C25) and motor oil range (C25-C40) petroleum hydrocarbons (TPH) were extracted by mechanical shaker method (CA LUFT) and the extracts were treated with silica gel cleanup (EPA 3630C) prior to analysis by GC/FID (EPA 8015M).

Polynuclear aromatic hydrocarbons (PAH) were extracted by ultrasonic method (EPA 3550B) and analyzed by selective ion mode GC/MS (EPA 8270C-SIM).

Volatile organic compounds were extracted by closed-system purge-and-trap method (EPA 5035) and analyzed by GC/MS (EPA 8260B).

CAM metals were digested by EPA 3050B method and analyzed by ICP-MS (EPA 6020), except for mercury, which was analyzed by CVAAS method (EPA 7471A).

All samples were extracted and analyzed within holding time. All analytical quality control parameters were within acceptable limits. There was no analytical anomaly except for the following remarks:

- PAH reporting limits for sample 09-C18366 were raised due to a higher final extract volume. The extract became viscous and could not be further concentrated.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18363
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-12-0.5	Tiffany Klitzke	12/14/09@14:20	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	0.05	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	36	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	17	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	35	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	26	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	51	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	31	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	29	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	21	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	38	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	36	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	2.5	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	160	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	42	1	2	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	11	1	2	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	22	1	2	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	3.3	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	0.7	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

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141 SUBURBAN ROAD, SUITE C • SAN LUIS OBISPO, CA 93401 • (805) 545-9838 • FAX (805) 545-0107

Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18363
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-12-0.5	Tiffany Klitzke	12/14/09@14:20	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Nickel	43	1	2	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	40	1	2	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	30	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
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2101 Webster St.
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Log Number: 09-C18364
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-13-0.5	Tiffany Klitzke	12/14/09@14:25	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	2.4	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	180	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	41	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	9.4	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	20	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	4.3	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

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Log Number: 09-C18364
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-13-0.5	Tiffany Klitzke	12/14/09@14:25	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Nickel	36	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	39	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	28	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
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Log Number: 09-C18365
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-15-0.5	Tiffany Klitzke	12/14/09@14:30	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	0.29	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	120	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	18	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	11	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	17	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	12	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	14	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	0.5	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	15	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	59	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	16	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	80	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	4.0	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	0.4	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

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Jonathan Skaggs
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Log Number: 09-C18365
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-15-0.5	Tiffany Klitzke	12/14/09@14:30	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Nickel	18	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	95	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	17	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
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Log Number: 09-C18366
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-14-1.0	Tiffany Klitzke	12/14/09@14:55	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	0.24	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	48	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Acenaphthene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	Not Detected	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	31	30	3	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	1.7	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	75	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	27	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	12	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	37	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	5.3	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

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Jonathan Skaggs
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Log Number: 09-C18366
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-14-1.0	Tiffany Klitzke	12/14/09@14:55	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Nickel	28	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	46	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	38	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
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2101 Webster St.
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Log Number: 09-C18367
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-9-1.0	Tiffany Klitzke	12/14/09@15:30	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	23	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	22	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	15	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	18	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	19	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	26	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	33	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	14	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	14	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	62	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
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2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18368
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-9-3.0	Tiffany Klitzke	12/14/09@15:40	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.
A Minority-owned Business Enterprise
141 SUBURBAN ROAD, SUITE C • SAN LUIS OBISPO, CA 93401 • (805) 545-9838 • FAX (805) 545-0107

Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18369
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-5-1.0	Tiffany Klitzke	12/14/09@15:40	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Benzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromochloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromodichloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromoform	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromomethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
t-Butylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
n-Butylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
sec-Butyl Benzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Carbon Tetrachloride	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Chlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chloroethylvinyl ether	Not Detected	30	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroform	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Chloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chlorotoluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
4-Chlorotoluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromo-3-Chloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromochloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromomethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromoethane (EDB)	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Dichlorodifluoromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,4-Dichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847

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Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2-Dichloroethane (EDC)	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,2-Dichloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,2-Dichloethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
2,2-Dichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloropropene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,3-Dichloropropene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,3-Dichloropropene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Ethylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Hexachlorobutadiene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Isopropylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
4-Isopropyltoluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Methylene Chloride	Not Detected	6	0	ug/Kg	EPA 8260	12/17/09		4847
Methyl t-Butyl Ether (MTBE)	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Naphthalene	Not Detected	6	0	ug/Kg	EPA 8260	12/17/09		4847
n-Propylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Styrene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1,2-Tetrachloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2,2-Tetrachloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Tetrachloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Toluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,3-Trichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1-Trichloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2-Trichloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Trichloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Trichlorofluoromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847

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Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trimethylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,3,5-Trimethylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Vinyl Chloride	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
m,p-Xylene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
o-Xylene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	2.4	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	81	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	17	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	5.2	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	10	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	6.6	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Nickel	20	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	26	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	36	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-5-2.0	Tiffany Klitzke	12/14/09@15:50	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Benzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromochloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromodichloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromoform	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromomethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
t-Butylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
n-Butylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
sec-Butyl Benzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Carbon Tetrachloride	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Chlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chloroethylvinyl ether	Not Detected	40	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroform	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Chloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chlorotoluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
4-Chlorotoluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromo-3-Chloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromochloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromomethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromoethane (EDB)	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Dichlorodifluoromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,4-Dichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847

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REPORT OF ANALYTICAL RESULTS

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SB-5-2.0	Tiffany Klitzke	12/14/09@15:50	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2-Dichloroethane (EDC)	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,2-Dichloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,2-Dichloethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
2,2-Dichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloropropene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,3-Dichloropropene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,3-Dichloropropene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Ethylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Hexachlorobutadiene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Isopropylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
4-Isopropyltoluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Methylene Chloride	Not Detected	9	0	ug/Kg	EPA 8260	12/17/09		4847
Methyl t-Butyl Ether (MTBE)	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Naphthalene	Not Detected	9	0	ug/Kg	EPA 8260	12/17/09		4847
n-Propylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Styrene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1,2-Tetrachloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2,2-Tetrachloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Tetrachloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Toluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,3-Trichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1-Trichloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2-Trichloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Trichloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Trichlorofluoromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847

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SB-5-2.0	Tiffany Klitzke	12/14/09@15:50	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trimethylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,3,5-Trimethylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Vinyl Chloride	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
m,p-Xylene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
o-Xylene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	1.7	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	59	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	17	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	4.9	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	8.2	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	3.0	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Nickel	17	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	24	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	22	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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SB-5-2.0	Tiffany Klitzke	12/14/09@15:50	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-1.0	Tiffany Klitzke	12/14/09@16:05	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Benzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromochloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromodichloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromoform	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Bromomethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
t-Butylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
n-Butylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
sec-Butyl Benzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Carbon Tetrachloride	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Chlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chloroethylvinyl ether	Not Detected	30	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroform	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Chloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chlorotoluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
4-Chlorotoluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromo-3-Chloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromochloromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromomethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromoethane (EDB)	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Dichlorodifluoromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,4-Dichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18371
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-1.0	Tiffany Klitzke	12/14/09@16:05	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2-Dichloroethane (EDC)	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,2-Dichloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,2-Dichloethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
2,2-Dichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloropropene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,3-Dichloropropene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,3-Dichloropropene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Ethylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Hexachlorobutadiene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Isopropylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
4-Isopropyltoluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Methylene Chloride	Not Detected	6	0	ug/Kg	EPA 8260	12/17/09		4847
Methyl t-Butyl Ether (MTBE)	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Naphthalene	Not Detected	6	0	ug/Kg	EPA 8260	12/17/09		4847
n-Propylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Styrene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1,2-Tetrachloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2,2-Tetrachloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Tetrachloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Toluene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,3-Trichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trichlorobenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1-Trichloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2-Trichloroethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Trichloroethene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Trichlorofluoromethane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847

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Jonathan Skaggs
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Log Number: 09-C18371
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-1.0	Tiffany Klitzke	12/14/09@16:05	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichloropropane	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trimethylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
1,3,5-Trimethylbenzene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Vinyl Chloride	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
m,p-Xylene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
o-Xylene	Not Detected	1	0	ug/Kg	EPA 8260	12/17/09		4847
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	2.6	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	76	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	22	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	6.0	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	13	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	15	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	0.4	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Nickel	23	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	32	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	54	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Log Number: 09-C18371
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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-1.0	Tiffany Klitzke	12/14/09@16:05	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-2.0	Tiffany Klitzke	12/14/09@16:15	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Benzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromochloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromodichloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromoform	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Bromomethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
t-Butylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
n-Butylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
sec-Butyl Benzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Carbon Tetrachloride	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Chlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chloroethylvinyl ether	Not Detected	40	0	ug/Kg	EPA 8260	12/17/09		4847
Chloroform	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Chloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
2-Chlorotoluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
4-Chlorotoluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromo-3-Chloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromochloromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Dibromomethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dibromoethane (EDB)	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Dichlorodifluoromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,4-Dichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847

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Jonathan Skaggs
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Log Number: 09-C18372
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-2.0	Tiffany Klitzke	12/14/09@16:15	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2-Dichloroethane (EDC)	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,2-Dichloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,2-Dichloethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2-Dichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,3-Dichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
2,2-Dichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1-Dichloropropene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
cis-1,3-Dichloropropene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
trans-1,3-Dichloropropene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Ethylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Hexachlorobutadiene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Isopropylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
4-Isopropyltoluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Methylene Chloride	Not Detected	7	0	ug/Kg	EPA 8260	12/17/09		4847
Methyl t-Butyl Ether (MTBE)	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Naphthalene	Not Detected	7	0	ug/Kg	EPA 8260	12/17/09		4847
n-Propylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Styrene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1,2-Tetrachloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2,2-Tetrachloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Tetrachloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Toluene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,3-Trichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trichlorobenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,1-Trichloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,1,2-Trichloroethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Trichloroethene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Trichlorofluoromethane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847

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Jonathan Skaggs
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2101 Webster St.
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Log Number: 09-C18372
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-2.0	Tiffany Klitzke	12/14/09@16:15	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichloropropane	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,2,4-Trimethylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
1,3,5-Trimethylbenzene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Vinyl Chloride	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
m,p-Xylene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
o-Xylene	Not Detected	2	0	ug/Kg	EPA 8260	12/17/09		4847
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Arsenic	1.2	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Barium	54	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Chromium	16	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Cobalt	4.6	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Copper	6.9	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Lead	2.4	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Molybdenum	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Nickel	16	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Vanadium	20	0.4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776
Zinc	19	4	1	mg/Kg	EPA 6020	12/16/09	12/16/09	4776

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Log Number: 09-C18372
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-6-2.0	Tiffany Klitzke	12/14/09@16:15	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Log Number: 09-C18373
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-10-1.0	Tiffany Klitzke	12/14/09@16:05	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
TPH as Motor Oil, SGT	24	10	1	mg/Kg	EPA 8015/LUFT	12/17/09	12/15/09	4846
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18374
Order: Q6666
Project: Marsh Landing
Received: 12/15/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-10-3.0	Tiffany Klitzke	12/14/09@16:15	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Acenaphthene	Not Detected	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Acenaphthylene	4,900	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Anthracene	2,500	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benz[a]anthracene	27,000	5000	500	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[a]pyrene	8,600	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[b]fluoranthene	2,500	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[ghi]perylene	2,500	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Benzo[k]fluoranthene	2,300	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Chrysene	32,000	5000	500	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Dibenz[a,h]anthracene	1,100	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluoranthene	29,000	5000	500	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Fluorene	500	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Naphthalene	650	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Phenanthrene	5,300	500	50	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881
Pyrene	62,000	5000	500	ug/Kg	EPA 8270 SIM	12/21/09	12/17/09	4881

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Quality Control Results

Order No.: Q6666
Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
Mercury	EPA 7471	< 0.04	mg/Kg	4859
TPH as Diesel, SGT	EPA 8015/LUFT	< 10	mg/Kg	4846
TPH as Motor Oil, SGT	EPA 8015/LUFT	< 10	mg/Kg	4846
Benzene	EPA 8260	< 5	ug/Kg	4847
Bromobenzene	EPA 8260	< 5	ug/Kg	4847
Bromochloromethane	EPA 8260	< 5	ug/Kg	4847
Bromodichloromethane	EPA 8260	< 5	ug/Kg	4847
Bromoform	EPA 8260	< 5	ug/Kg	4847
Bromomethane	EPA 8260	< 5	ug/Kg	4847
t-Butylbenzene	EPA 8260	< 5	ug/Kg	4847
n-Butylbenzene	EPA 8260	< 5	ug/Kg	4847
sec-Butyl Benzene	EPA 8260	< 5	ug/Kg	4847
Carbon Tetrachloride	EPA 8260	< 5	ug/Kg	4847
Chlorobenzene	EPA 8260	< 5	ug/Kg	4847
Chloroethane	EPA 8260	< 5	ug/Kg	4847
2-Chloroethylvinyl ether	EPA 8260	< 100	ug/Kg	4847
Chloroform	EPA 8260	< 5	ug/Kg	4847
Chloromethane	EPA 8260	< 5	ug/Kg	4847
2-Chlorotoluene	EPA 8260	< 5	ug/Kg	4847
4-Chlorotoluene	EPA 8260	< 5	ug/Kg	4847
1,2-Dibromo-3-Chloropropane	EPA 8260	< 5	ug/Kg	4847
Dibromochloromethane	EPA 8260	< 5	ug/Kg	4847
Dibromomethane	EPA 8260	< 5	ug/Kg	4847
1,2-Dibromoethane (EDB)	EPA 8260	< 5	ug/Kg	4847
Dichlorodifluoromethane	EPA 8260	< 5	ug/Kg	4847
1,2-Dichlorobenzene	EPA 8260	< 5	ug/Kg	4847
1,3-Dichlorobenzene	EPA 8260	< 5	ug/Kg	4847
1,4-Dichlorobenzene	EPA 8260	< 5	ug/Kg	4847
1,1-Dichloroethane	EPA 8260	< 5	ug/Kg	4847
1,2-Dichloroethane (EDC)	EPA 8260	< 5	ug/Kg	4847
1,1-Dichloroethene	EPA 8260	< 5	ug/Kg	4847
cis-1,2-Dichloroethene	EPA 8260	< 5	ug/Kg	4847
trans-1,2-Dichloethene	EPA 8260	< 5	ug/Kg	4847
1,2-Dichloropropane	EPA 8260	< 5	ug/Kg	4847
1,3-Dichloropropane	EPA 8260	< 5	ug/Kg	4847
2,2-Dichloropropane	EPA 8260	< 5	ug/Kg	4847
1,1-Dichloropropene	EPA 8260	< 5	ug/Kg	4847
cis-1,3-Dichloropropene	EPA 8260	< 5	ug/Kg	4847
trans-1,3-Dichloropropene	EPA 8260	< 5	ug/Kg	4847
Ethylbenzene	EPA 8260	< 5	ug/Kg	4847
Hexachlorobutadiene	EPA 8260	< 5	ug/Kg	4847
Isopropylbenzene	EPA 8260	< 5	ug/Kg	4847
4-Isopropyltoluene	EPA 8260	< 5	ug/Kg	4847
Methylene Chloride	EPA 8260	< 20	ug/Kg	4847
Methyl t-Butyl Ether (MTBE)	EPA 8260	< 5	ug/Kg	4847

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Quality Control Results

Order No.: Q6666

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
Naphthalene	EPA 8260	< 20	ug/Kg	4847
n-Propylbenzene	EPA 8260	< 5	ug/Kg	4847
Styrene	EPA 8260	< 5	ug/Kg	4847
1,1,1,2-Tetrachloroethane	EPA 8260	< 5	ug/Kg	4847
1,1,2,2-Tetrachloroethane	EPA 8260	< 5	ug/Kg	4847
Tetrachloroethene	EPA 8260	< 5	ug/Kg	4847
Toluene	EPA 8260	< 5	ug/Kg	4847
1,2,3-Trichlorobenzene	EPA 8260	< 5	ug/Kg	4847
1,2,4-Trichlorobenzene	EPA 8260	< 5	ug/Kg	4847
1,1,1-Trichloroethane	EPA 8260	< 5	ug/Kg	4847
1,1,2-Trichloroethane	EPA 8260	< 5	ug/Kg	4847
Trichloroethene	EPA 8260	< 5	ug/Kg	4847
Trichlorofluoromethane	EPA 8260	< 5	ug/Kg	4847
1,2,3-Trichloropropane	EPA 8260	< 5	ug/Kg	4847
1,2,4-Trimethylbenzene	EPA 8260	< 5	ug/Kg	4847
1,3,5-Trimethylbenzene	EPA 8260	< 5	ug/Kg	4847
Vinyl Chloride	EPA 8260	< 5	ug/Kg	4847
m,p-Xylene	EPA 8260	< 5	ug/Kg	4847
o-Xylene	EPA 8260	< 5	ug/Kg	4847
Acenaphthene	EPA 8270 SIM	< 10	ug/Kg	4881
Acenaphthylene	EPA 8270 SIM	< 10	ug/Kg	4881
Anthracene	EPA 8270 SIM	< 10	ug/Kg	4881
Benz[a]anthracene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[a]pyrene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[b]fluoranthene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[ghi]perylene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[k]fluoranthene	EPA 8270 SIM	< 10	ug/Kg	4881
Chrysene	EPA 8270 SIM	< 10	ug/Kg	4881
Dibenz[a,h]anthracene	EPA 8270 SIM	< 10	ug/Kg	4881
Fluoranthene	EPA 8270 SIM	< 10	ug/Kg	4881
Fluorene	EPA 8270 SIM	< 10	ug/Kg	4881
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	< 10	ug/Kg	4881
Naphthalene	EPA 8270 SIM	< 10	ug/Kg	4881
Phenanthrene	EPA 8270 SIM	< 10	ug/Kg	4881
Pyrene	EPA 8270 SIM	< 10	ug/Kg	4881
Antimony	EPA 6020	< 0.4	mg/Kg	4776
Arsenic	EPA 6020	< 0.4	mg/Kg	4776
Barium	EPA 6020	< 0.4	mg/Kg	4776
Beryllium	EPA 6020	< 0.4	mg/Kg	4776
Cadmium	EPA 6020	< 0.4	mg/Kg	4776
Chromium	EPA 6020	< 0.4	mg/Kg	4776
Cobalt	EPA 6020	< 0.4	mg/Kg	4776
Copper	EPA 6020	< 0.4	mg/Kg	4776
Lead	EPA 6020	< 0.4	mg/Kg	4776

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Order No.: Q6666

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
Molybdenum	EPA 6020	< 0.4	mg/Kg	4776
Nickel	EPA 6020	< 0.4	mg/Kg	4776
Selenium	EPA 6020	< 0.5	mg/Kg	4776
Silver	EPA 6020	< 0.4	mg/Kg	4776
Thallium	EPA 6020	< 0.4	mg/Kg	4776
Vanadium	EPA 6020	< 0.4	mg/Kg	4776
Zinc	EPA 6020	< 4	mg/Kg	4776

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Mercury	EPA 7471	105%	0.8	mg/Kg	56 - 148	4859
TPH as Diesel, SGT	EPA 8015/LUFT	60%	250	mg/Kg	50 - 150	4846
Benzene	EPA 8260	104%	50	ug/Kg	60 - 140	4847
Chlorobenzene	EPA 8260	106%	50	ug/Kg	60 - 140	4847
1,1-Dichloroethene	EPA 8260	98%	50	ug/Kg	60 - 140	4847
Toluene	EPA 8260	102%	50	ug/Kg	60 - 140	4847
Trichloroethene	EPA 8260	102%	50	ug/Kg	60 - 140	4847
Acenaphthene	EPA 8270 SIM	55%	67	ug/Kg	31 - 137	4881
Acenaphthylene	EPA 8270 SIM	36%	67	ug/Kg	26 - 119	4881
Anthracene	EPA 8270 SIM	57%	67	ug/Kg	44 - 110	4881
Benz[a]anthracene	EPA 8270 SIM	76%	67	ug/Kg	38 - 134	4881
Benzo[a]pyrene	EPA 8270 SIM	64%	67	ug/Kg	36 - 121	4881
Benzo[b]fluoranthene	EPA 8270 SIM	78%	67	ug/Kg	37 - 129	4881
Benzo[ghi]perylene	EPA 8270 SIM	79%	67	ug/Kg	31 - 128	4881
Benzo[k]fluoranthene	EPA 8270 SIM	76%	67	ug/Kg	36 - 135	4881
Chrysene	EPA 8270 SIM	76%	67	ug/Kg	38 - 128	4881
Dibenz[a,h]anthracene	EPA 8270 SIM	79%	67	ug/Kg	28 - 134	4881
Fluoranthene	EPA 8270 SIM	78%	67	ug/Kg	37 - 126	4881
Fluorene	EPA 8270 SIM	64%	67	ug/Kg	29 - 119	4881
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	81%	67	ug/Kg	25 - 125	4881
Naphthalene	EPA 8270 SIM	16%	67	ug/Kg	15 - 119	4881
Phenanthrene	EPA 8270 SIM	78%	67	ug/Kg	38 - 124	4881
Pyrene	EPA 8270 SIM	75%	67	ug/Kg	35 - 142	4881
Antimony	EPA 6020	112%	50	mg/Kg	10 - 120	4776
Arsenic	EPA 6020	87%	50	mg/Kg	50 - 130	4776
Barium	EPA 6020	98%	50	mg/Kg	60 - 140	4776
Beryllium	EPA 6020	95%	50	mg/Kg	60 - 140	4776
Cadmium	EPA 6020	97%	50	mg/Kg	60 - 140	4776
Chromium	EPA 6020	102%	50	mg/Kg	60 - 140	4776
Cobalt	EPA 6020	102%	50	mg/Kg	60 - 140	4776
Copper	EPA 6020	103%	50	mg/Kg	60 - 140	4776
Lead	EPA 6020	108%	50	mg/Kg	60 - 140	4776

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Quality Control Results

Order No.: Q6666

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Molybdenum	EPA 6020	94%	50	mg/Kg	60 - 140	4776
Nickel	EPA 6020	94%	50	mg/Kg	60 - 140	4776
Selenium	EPA 6020	94%	200	mg/Kg	60 - 140	4776
Silver	EPA 6020	98%	50	mg/Kg	50 - 130	4776
Thallium	EPA 6020	105%	50	mg/Kg	60 - 140	4776
Vanadium	EPA 6020	96%	50	mg/Kg	60 - 140	4776
Zinc	EPA 6020	102%	50	mg/Kg	60 - 140	4776

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Mercury	EPA 7471	104%	108%	5	09-C18369	0.8	mg/Kg	56 - 148	30	4859
TPH as Diesel, SGT	EPA 8015/LUFT	77%	64%	18	09-C18368	250	mg/Kg	50 - 150	30	4846
Antimony	EPA 6020	43%	36%	18	09-C18369	50	mg/Kg	10 - 120	30	4776
Arsenic	EPA 6020	95%	91%	4	09-C18369	50	mg/Kg	50 - 130	30	4776
Barium	EPA 6020	71%	87%	7	09-C18369	50	mg/Kg	60 - 140	30	4776
Beryllium	EPA 6020	92%	95%	4	09-C18369	50	mg/Kg	60 - 140	30	4776
Cadmium	EPA 6020	110%	109%	1	09-C18369	50	mg/Kg	60 - 140	30	4776
Chromium	EPA 6020	93%	95%	2	09-C18369	50	mg/Kg	60 - 140	30	4776
Cobalt	EPA 6020	95%	99%	4	09-C18369	50	mg/Kg	60 - 140	30	4776
Copper	EPA 6020	99%	107%	6	09-C18369	50	mg/Kg	60 - 140	30	4776
Lead	EPA 6020	101%	108%	6	09-C18369	50	mg/Kg	60 - 140	30	4776
Molybdenum	EPA 6020	102%	104%	2	09-C18369	50	mg/Kg	60 - 140	30	4776
Nickel	EPA 6020	91%	94%	2	09-C18369	50	mg/Kg	60 - 140	30	4776
Selenium	EPA 6020	105%	101%	4	09-C18369	200	mg/Kg	60 - 140	30	4776
Silver	EPA 6020	98%	96%	2	09-C18369	50	mg/Kg	50 - 130	30	4776
Thallium	EPA 6020	105%	109%	3	09-C18369	50	mg/Kg	60 - 140	30	4776
Vanadium	EPA 6020	95%	99%	3	09-C18369	50	mg/Kg	60 - 140	30	4776
Zinc	EPA 6020	86%	94%	5	09-C18369	50	mg/Kg	60 - 140	30	4776

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
Benzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Bromobenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Bromochloromethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Bromodichloromethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Bromoform	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Bromomethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	50.	4847
t-Butylbenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
n-Butylbenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
sec-Butyl Benzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847

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Quality Control Results

Order No.: Q6666

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
Carbon Tetrachloride	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Chlorobenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Chloroethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	50.	4847
2-Chloroethylvinyl ether	EPA 8260	09-C18372	< 35	< 32	9	ug/Kg	50.	4847
Chloroform	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Chloromethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	50.	4847
2-Chlorotoluene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
4-Chlorotoluene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,2-Dibromo-3-Chloropropane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	40.	4847
Dibromochloromethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Dibromomethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,2-Dibromoethane (EDB)	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Dichlorodifluoromethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	50.	4847
1,2-Dichlorobenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,3-Dichlorobenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,4-Dichlorobenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,1-Dichloroethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,2-Dichloroethane (EDC)	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	40.	4847
1,1-Dichloroethene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
cis-1,2-Dichloroethene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
trans-1,2-Dichloethene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,2-Dichloropropane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,3-Dichloropropane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
2,2-Dichloropropane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,1-Dichloropropene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
cis-1,3-Dichloropropene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
trans-1,3-Dichloropropene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Ethylbenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Hexachlorobutadiene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	40.	4847
Isopropylbenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
4-Isopropyltoluene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Methylene Chloride	EPA 8260	09-C18372	< 7	< 6	15	ug/Kg	40.	4847
Methyl t-Butyl Ether (MTBE)	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	40.	4847
Naphthalene	EPA 8260	09-C18372	< 7	< 6	15	ug/Kg	40.	4847
n-Propylbenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Styrene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,1,1,2-Tetrachloroethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,1,2,2-Tetrachloroethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Tetrachloroethene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Toluene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,2,3-Trichlorobenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,2,4-Trichlorobenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,1,1-Trichloroethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,1,2-Trichloroethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847

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Order No.: Q6666

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
Trichloroethene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Trichlorofluoromethane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	50.	4847
1,2,3-Trichloropropane	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	40.	4847
1,2,4-Trimethylbenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
1,3,5-Trimethylbenzene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
Vinyl Chloride	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	50.	4847
m,p-Xylene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847
o-Xylene	EPA 8260	09-C18372	< 2	< 2	0	ug/Kg	30.	4847

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Surrogate Report

Sample Number	Batch	Method	Surrogate	% Recovery	QC Limits
09-C18363	4881	EPA 8270	Pyrene-d10 (Aromatic)	63.	16-127
09-C18363	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	86.	50-150
09-C18364	4881	EPA 8270	Pyrene-d10 (Aromatic)	57.	16-127
09-C18364	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	80.	50-150
09-C18365	4881	EPA 8270	Pyrene-d10 (Aromatic)	48.	16-127
09-C18365	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	99.	50-150
09-C18366	4881	EPA 8270	Pyrene-d10 (Aromatic)	46.	16-127
09-C18366	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	78.	50-150
09-C18367	4881	EPA 8270	Pyrene-d10 (Aromatic)	50.	16-127
09-C18367	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	100.	50-150
09-C18368	4881	EPA 8270	Pyrene-d10 (Aromatic)	65.	16-127
09-C18369	4847	EPA 8260	Dibromofluoromethane	104.	80-130
09-C18369	4847	EPA 8260	Toluene-d8	106.	70-126
09-C18369	4847	EPA 8260	4-BFB	112.	57-124
09-C18369	4847	EPA 8260	1,2-Dichloroethane-d4	106.	60-143
09-C18369	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	80.	50-150
09-C18370	4847	EPA 8260	Dibromofluoromethane	105.	80-130
09-C18370	4847	EPA 8260	Toluene-d8	102.	70-126
09-C18370	4847	EPA 8260	4-BFB	101.	57-124
09-C18370	4847	EPA 8260	1,2-Dichloroethane-d4	105.	60-143
09-C18370	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	74.	50-150
09-C18371	4847	EPA 8260	Dibromofluoromethane	106.	80-130
09-C18371	4847	EPA 8260	Toluene-d8	107.	70-126
09-C18371	4847	EPA 8260	4-BFB	116.	57-124
09-C18371	4847	EPA 8260	1,2-Dichloroethane-d4	108.	60-143
09-C18371	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	89.	50-150
09-C18372	4847	EPA 8260	Dibromofluoromethane	104.	80-130
09-C18372	4847	EPA 8260	Toluene-d8	103.	70-126
09-C18372	4847	EPA 8260	4-BFB	101.	57-124
09-C18372	4847	EPA 8260	1,2-Dichloroethane-d4	103.	60-143
09-C18372	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	67.	50-150
09-C18373	4881	EPA 8270	Pyrene-d10 (Aromatic)	56.	16-127
09-C18373	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	103.	50-150
09-C18374	4881	EPA 8270	Pyrene-d10 (Aromatic)	90.	16-127
blank	4847	EPA 8260	Dibromofluoromethane	106.	80-130
LCS	4847	EPA 8260	Dibromofluoromethane	101.	80-130
09-C18372 dup.	4847	EPA 8260	Dibromofluoromethane	106.	80-130
blank	4847	EPA 8260	Toluene-d8	100.	70-126
LCS	4847	EPA 8260	Toluene-d8	100.	70-126
09-C18372 dup.	4847	EPA 8260	Toluene-d8	103.	70-126
blank	4847	EPA 8260	4-BFB	100.	57-124
LCS	4847	EPA 8260	4-BFB	100.	57-124
09-C18372 dup.	4847	EPA 8260	4-BFB	98.	57-124
blank	4881	EPA 8270	Pyrene-d10 (Aromatic)	70.	16-127
LCS	4881	EPA 8270	Pyrene-d10 (Aromatic)	69.	16-127
blank	4847	EPA 8260	1,2-Dichloroethane-d4	113.	60-143

Surrogate Report

Sample Number	Batch	Method	Surrogate	% Recovery	QC Limits
LCS	4847	EPA 8260	1,2-Dichloroethane-d4	99.	60-143
09-C18372 dup.	4847	EPA 8260	1,2-Dichloroethane-d4	106.	60-143
blank	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	69.	50-150
LCS	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	69.	50-150
09-C18368 MS	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	92.	50-150
09C18368 MSD	4846	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	74.	50-150

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ANALYTICAL RESULTS

Ordered By

Creek Environmental Labs, Inc.
141 Suburban Rd Suite C-5
San Luis Obispo, CA 93401-

Telephone: (805)545-9838
Attn: Orval Osborne

Page: 2

Project ID: Q6666

ASL Job Number	Submitted	Client
44132	12/16/2009	CREEK

Method: 8082, Polychlorinated Biphenyls(PCBs) by Gas Chromatography

QC Batch No: 121709-1

Our Lab I.D.		246338	246339	246340	246341	246342
Client Sample I.D.		(18363B) SB-12-0.5	(18364B) SB-13-0.5	(18365B) SB-15-05	(18366B) SB-14-1.0	(18367B) SB-9-1.0
Date Sampled		12/14/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009
Date Prepared		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Preparation Method						
Date Analyzed		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Matrix		Soil	Soil	Soil	Soil	Soil
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor		1	1	1	1	1
Analytes	PQL	Results	Results	Results	Results	Results
Aroclor-1016 (PCB-1016)	33.0	ND	ND	ND	ND	ND
Aroclor-1221 (PCB-1221)	67.0	ND	ND	ND	ND	ND
Aroclor-1232 (PCB-1232)	33.0	ND	ND	ND	ND	ND
Aroclor-1242 (PCB-1242)	33.0	ND	ND	ND	ND	ND
Aroclor-1248 (PCB-1248)	33.0	ND	ND	ND	ND	ND
Aroclor-1254 (PCB-1254)	33.0	ND	ND	ND	ND	ND
Aroclor-1260 (PCB-1260)	33.0	ND	ND	ND	ND	ND

Our Lab I.D.		246338	246339	246340	246341	246342
Surrogates	% Rec.Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Surrogate Percent Recovery						
Decachlorobiphenyl	43-169	115	102	111	75	105

QUALITY CONTROL REPORT

QC Batch No: 121709-1

Analytes	MS % REC	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Aroclor-1260 (PCB-1260)	92	96	4.3	39-150	<30	81	82	1.2	39-150	<30

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ANALYTICAL RESULTS

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Page: 3

Project ID: Q6666

ASL Job Number	Submitted	Client
44132	12/16/2009	CREEK

Method: 8082, Polychlorinated Biphenyls(PCBs) by Gas Chromatography

QC Batch No: 121709-1

Our Lab I.D.		246343	246344	246345	246346	246347
Client Sample I.D.		(18368B) SB-9-3.0	(18369E) SB-5-1.0	(18370E) SB-5-2.0	(18371E) SB-6-1.0	(18372E) SB-6-2.0
Date Sampled		12/14/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009
Date Prepared		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Preparation Method						
Date Analyzed		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Matrix		Soil	Soil	Soil	Soil	Soil
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor		1	1	1	1	1
Analytes	PQL	Results	Results	Results	Results	Results
Aroclor-1016 (PCB-1016)	33.0	ND	ND	ND	ND	ND
Aroclor-1221 (PCB-1221)	67.0	ND	ND	ND	ND	ND
Aroclor-1232 (PCB-1232)	33.0	ND	ND	ND	ND	ND
Aroclor-1242 (PCB-1242)	33.0	ND	ND	ND	ND	ND
Aroclor-1248 (PCB-1248)	33.0	ND	ND	ND	ND	ND
Aroclor-1254 (PCB-1254)	33.0	ND	ND	ND	ND	ND
Aroclor-1260 (PCB-1260)	33.0	ND	ND	ND	ND	ND

Our Lab I.D.		246343	246344	246345	246346	246347
Surrogates	% Rec.Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Surrogate Percent Recovery						
Decachlorobiphenyl	43-169	79	90	78	95	80

QUALITY CONTROL REPORT

QC Batch No: 121709-1

Analytes	MS % REC	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Aroclor-1260 (PCB-1260)	92	96	4.3	39-150	<30	81	82	1.2	39-150	<30

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ANALYTICAL RESULTS

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Project ID: Q6666

ASL Job Number	Submitted	Client
44132	12/16/2009	CREEK

Method: 8082, Polychlorinated Biphenyls(PCBs) by Gas Chromatography

QC Batch No: 121709-1

Our Lab I.D.		246348	246349			
Client Sample I.D.		(18373B) SB-10-1.0	(18374B) SB-10-3.0			
Date Sampled		12/14/2009	12/14/2009			
Date Prepared		12/17/2009	12/17/2009			
Preparation Method						
Date Analyzed		12/17/2009	12/17/2009			
Matrix		Soil	Soil			
Units		ug/kg	ug/kg			
Dilution Factor		1	1			
Analytes	PQL	Results	Results			
Aroclor-1016 (PCB-1016)	33.0	ND	ND			
Aroclor-1221 (PCB-1221)	67.0	ND	ND			
Aroclor-1232 (PCB-1232)	33.0	ND	ND			
Aroclor-1242 (PCB-1242)	33.0	ND	ND			
Aroclor-1248 (PCB-1248)	33.0	ND	ND			
Aroclor-1254 (PCB-1254)	33.0	ND	ND			
Aroclor-1260 (PCB-1260)	33.0	ND	ND			

Our Lab I.D.		246348	246349			
Surrogates	% Rec.Limit	% Rec.	% Rec.			
Surrogate Percent Recovery						
Decachlorobiphenyl	43-169	96	85			

QUALITY CONTROL REPORT

QC Batch No: 121709-1

Analytes	MS % REC	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Aroclor-1260 (PCB-1260)	92	96	4.3	39-150	<30	81	82	1.2	39-150	<30

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ANALYTICAL RESULTS

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Project ID: Q6666

ASL Job Number	Submitted	Client
44132	12/16/2009	CREEK

Method: SM2540-G, Percent Solids

QC Batch No: 121709-1

Our Lab I.D.		246338	246339	246340	246341	246342
Client Sample I.D.		(18363B) SB-12-0.5	(18364B) SB-13-0.5	(18365B) SB-15-05	(18366B) SB-14-1.0	(18367B) SB-9-1.0
Date Sampled		12/14/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009
Date Prepared		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Preparation Method						
Date Analyzed		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Matrix		Soil	Soil	Soil	Soil	Soil
Units		percent(%)	percent(%)	percent(%)	percent(%)	percent(%)
Dilution Factor		1	1	1	1	1
Analytes	PQL	Results	Results	Results	Results	Results
Conventionals						
% Solids	1.00	90.4	88.8	94.2	88.9	91.2

QUALITY CONTROL REPORT

QC Batch No: 121709-1

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit						
Conventionals										
% Solids	90.4	90.9	<1	20						

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ANALYTICAL RESULTS

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Project ID: Q6666

ASL Job Number	Submitted	Client
44132	12/16/2009	CREEK

Method: SM2540-G, Percent Solids

QC Batch No: 121709-1

Our Lab I.D.		246343	246344	246345	246346	246347
Client Sample I.D.		(18368B) SB-9-3.0	(18369E) SB-5-1.0	(18370E) SB-5-2.0	(18371E) SB-6-1.0	(18372E) SB-6-2.0
Date Sampled		12/14/2009	12/14/2009	12/14/2009	12/14/2009	12/14/2009
Date Prepared		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Preparation Method						
Date Analyzed		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Matrix		Soil	Soil	Soil	Soil	Soil
Units		percent(%)	percent(%)	percent(%)	percent(%)	percent(%)
Dilution Factor		1	1	1	1	1
Analytes	PQL	Results	Results	Results	Results	Results
Conventionals						
% Solids	1.00	92.5	89.4	87.8	91.9	89.5

QUALITY CONTROL REPORT

QC Batch No: 121709-1

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit						
Conventionals										
% Solids	90.4	90.9	<1	20						

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ANALYTICAL RESULTS

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Project ID: Q6666

ASL Job Number	Submitted	Client
44132	12/16/2009	CREEK

Method: SM2540-G, Percent Solids

QC Batch No: 121709-1

Our Lab I.D.		246348	246349			
Client Sample I.D.		(18373B) SB-10-1.0	(18374B) SB-10-3.0			
Date Sampled		12/14/2009	12/14/2009			
Date Prepared		12/17/2009	12/17/2009			
Preparation Method						
Date Analyzed		12/17/2009	12/17/2009			
Matrix		Soil	Soil			
Units		percent(%)	percent(%)			
Dilution Factor		1	1			
Analytes	PQL	Results	Results			
Conventionals						
% Solids	1.00	84.6	93.5			

QUALITY CONTROL REPORT

QC Batch No: 121709-1

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit						
Conventionals										
% Solids	90.4	90.9	<1	20						

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Date: December 22, 2009

CASE NARRATIVE Q6697

REVISED
1-11-10

Client: **Amec Geomatrix**
Project: **PG&E Marsh Landing**
Sample(s): **09-C18477 to 09-C18480**
Sampled: **12/15/09** **Received: 12/16/09**

Samples 09-C18477 to 09-C18480 were received at the laboratory at 4.5 °C with no anomaly.

Diesel range (C10-C25) and motor oil range (C25-C40) petroleum hydrocarbons (TPH) were extracted by separatory funnel method (EPA 3510C) and the extracts were treated with silica gel cleanup (EPA 3630C) prior to analysis by GC/FID (EPA 8015M).

Volatile organic compounds were extracted by purge-and-trap method (EPA 5030B) and analyzed by GC/MS (EPA 8260B).

CAM metals were digested by EPA 3010A method and analyzed by ICP-MS (EPA 6020), except for mercury, which was analyzed by CVAAS method (EPA 7470A).

All samples were extracted and analyzed within holding time. All analytical quality control parameters were within acceptable limits and there was no analytical anomaly.

Sample 09-C18478 (SB-3-GW) was reanalyzed for TPH diesel and motor oil. It was determined that the original positive results were due to contamination. The results were revised for TPH diesel and motor oil to not detected (ND). It was due to lab error that the original results were released before there was positive confirmation of the contamination.

CREEK ENVIRONMENTAL LABORATORIES

For:
Lab Director, Michael Ng

CHAIN-OF-CUSTODY RECORD

Q6697 OAK 16147

PROJECT NAME: MARSH LANDING

PROJECT NUMBER: 15317.000

RESULTS TO: jonathan.skaggs@amec.com

TURNAROUND TIME: 4 day

SAMPLE SHIPMENT METHOD: Fed Ex

LABORATORY NAME: Creek Environmental

LABORATORY ADDRESS: San Luis Obispo

LABORATORY CONTACT: Judy

LABORATORY PHONE NUMBER:

CLIENT INFORMATION:

DATE: 12/15/09 PAGE 1 OF 1

REPORTING REQUIREMENTS:

GEOTRACKER REQUIRED YES NO

SITE SPECIFIC GLOBAL ID NO.

SAMPLERS (SIGNATURE):

ANALYSES

DATE	TIME	SAMPLE NUMBER	VOCs by 8260B	TPHd by 8015M	TPHmo by 8015M	Silica Gel Cleanup	Title 22 Metals 6010	Mercury 7471A	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
12/15/09	0941	TB-121509	X						40mL VOA	W	N	HCl	Y	N	2	A,B 18477
↓	1420	SB-3-GW	X	X	X	X	X	X	40mL VOA, AMBER, POLY	↓	→	See Notes	Y	↓	5	Metals field filtered 18478*
	1445	SB-2-GW	X	X	X	X	X	X	40mL VOA, Amber, Poly		→	See Notes	Y		5	metals field filtered 18479
	1500	SB-20-GW	X	X	X	X	X	X	40mL VOA, Amber, Poly		→	See Notes	Y		5	metals field filtered 18480

* 3VOA'S A,B,C
AG/unp/1L D
P/HNO3/250mL E
for 18478, 18479, 18480

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
SIGNATURE: [signature] PRINTED NAME: Tiffany Klitzke COMPANY: AMEC Geomatrix	12/15/09	1850	SIGNATURE: Kathy Wenslof PRINTED NAME: Kathy Wensloff COMPANY: Creek Env. Lab	12/16/9	11:03
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		

TOTAL NUMBER OF CONTAINERS: 17

SAMPLING COMMENTS: For SB-3-GW, SB-2-GW, SB-20-GW each sample consists of 3 40mL VOA vials preserved with HCl, 1 L unpreserved amber, 1 250 mL Poly preserved with HNO3.
* Metals were field filtered *
Send results to jonathan.skaggs@amec.com + heidi.dietrich@amec.com

2101 Webster Street, 12th Floor
Oakland, California 94612-3066
Tel 510.663.4100 Fax 510.663.4141

amec

Temp: 4.5°C

Custody seal opened 12/16/09 11:03 KEW

CREEK ENVIRONMENTAL LABORATORIES, INC.
A Minority-owned Business Enterprise
141 SUBURBAN ROAD, SUITE C • SAN LUIS OBISPO, CA 93401 • (805) 545-9838 • FAX (805) 545-0107

Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18477
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
TB-121509	Tiffany Klitzke	12/15/09@09:41	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	12/21/09		4905
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	12/21/09		4905
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18477
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
TB-121509	Tiffany Klitzke	12/15/09@09:41	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,2-Dichloethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18477
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
TB-121509	Tiffany Klitzke	12/15/09@09:41	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

for:
Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18478
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REVISED
1-6-10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-3-GW	Tiffany Klitzke	12/15/09@14:20	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.0005	1	mg/L	EPA 7470	12/18/09	12/18/09	4864
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	12/21/09	12/18/09	4913
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	12/21/09	12/18/09	4913
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	12/21/09		4905
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18478
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-3-GW	Tiffany Klitzke	12/15/09@14:20	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	12/21/09		4905
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,2-Dichloethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Jonathan Skaggs
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2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18478
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-3-GW	Tiffany Klitzke	12/15/09@14:20	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Antimony	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Arsenic	0.065	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Barium	0.055	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Beryllium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cadmium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Chromium	0.046	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cobalt	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Copper	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Lead	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Molybdenum	0.014	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Nickel	0.016	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Selenium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Silver	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Thallium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Vanadium	0.18	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Zinc	Not Detected	0.08	1	mg/L	EPA 6020	12/21/09	12/18/09	4899

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-3-GW	Tiffany Klitzke	12/15/09@14:20	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-2-GW	Tiffany Klitzke	12/15/09@14:45	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.0005	1	mg/L	EPA 7470	12/18/09	12/18/09	4864
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	12/21/09	12/18/09	4913
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	12/21/09	12/18/09	4913
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	12/21/09		4905
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

CREEK ENVIRONMENTAL LABORATORIES, INC.
A Minority-owned Business Enterprise
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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18479
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-2-GW	Tiffany Klitzke	12/15/09@14:45	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	12/21/09		4905
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,2-Dichloethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18479
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-2-GW	Tiffany Klitzke	12/15/09@14:45	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Antimony	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Arsenic	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Barium	0.086	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Beryllium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cadmium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Chromium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cobalt	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Copper	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Lead	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Molybdenum	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Nickel	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Selenium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Silver	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Thallium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Vanadium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Zinc	Not Detected	0.08	1	mg/L	EPA 6020	12/21/09	12/18/09	4899

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Jonathan Skaggs
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2101 Webster St.
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Log Number: 09-C18479
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-2-GW	Tiffany Klitzke	12/15/09@14:45	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18480
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-20-GW	Tiffany Klitzke	12/15/09@15:00	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.0005	1	mg/L	EPA 7470	12/18/09	12/18/09	4864
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	12/21/09	12/18/09	4913
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	12/21/09	12/18/09	4913
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	12/21/09		4905
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18480
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-20-GW	Tiffany Klitzke	12/15/09@15:00	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	12/21/09		4905
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,2-Dichloethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4905
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18480
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-20-GW	Tiffany Klitzke	12/15/09@15:00	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4905
Antimony	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Arsenic	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Barium	0.074	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Beryllium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cadmium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Chromium	0.008	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cobalt	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Copper	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Lead	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Molybdenum	0.016	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Nickel	0.009	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Selenium	Not Detected	0.01	2	mg/L	EPA 6020	12/21/09	12/18/09	4899
Silver	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Thallium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Vanadium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Zinc	Not Detected	0.08	1	mg/L	EPA 6020	12/21/09	12/18/09	4899

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18480
Order: Q6697
Project: Marsh Landing
Received: 12/16/09
Printed: 01/11/10

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-20-GW	Tiffany Klitzke	12/15/09@15:00	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

Quality Control Results

Order No.: Q6697
Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
Mercury	EPA 7470	< 0.0005	mg/L	4864
TPH as Diesel, SGT	EPA 8015/LUFT	< 0.05	mg/L	4913
TPH as Motor Oil, SGT	EPA 8015/LUFT	< 0.1	mg/L	4913
Benzene	EPA 8260	< 0.5	ug/L	4905
Toluene	EPA 8260	< 0.5	ug/L	4905
Ethylbenzene	EPA 8260	< 0.5	ug/L	4905
m,p-Xylene	EPA 8260	< 0.5	ug/L	4905
o-Xylene	EPA 8260	< 0.5	ug/L	4905
Methyl t-Butyl Ether (MTBE)	EPA 8260	< 0.5	ug/L	4905
Chlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,2-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,3-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,4-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,2-Dichloroethane (EDC)	EPA 8260	< 0.5	ug/L	4905
1,2-Dibromoethane (EDB)	EPA 8260	< 0.5	ug/L	4905
Bromobenzene	EPA 8260	< 0.5	ug/L	4905
Bromochloromethane	EPA 8260	< 0.5	ug/L	4905
Bromodichloromethane	EPA 8260	< 0.5	ug/L	4905
Bromoform	EPA 8260	< 0.5	ug/L	4905
Bromomethane	EPA 8260	< 0.5	ug/L	4905
n-Butylbenzene	EPA 8260	< 0.5	ug/L	4905
sec-Butyl Benzene	EPA 8260	< 0.5	ug/L	4905
t-Butylbenzene	EPA 8260	< 0.5	ug/L	4905
Carbon Tetrachloride	EPA 8260	< 0.5	ug/L	4905
Chloroethane	EPA 8260	< 0.5	ug/L	4905
2-Chloroethylvinyl ether	EPA 8260	< 20	ug/L	4905
Chloroform	EPA 8260	< 0.5	ug/L	4905
Chloromethane	EPA 8260	< 0.5	ug/L	4905
2-Chlorotoluene	EPA 8260	< 0.5	ug/L	4905
4-Chlorotoluene	EPA 8260	< 0.5	ug/L	4905
1,2-Dibromo-3-Chloropropane	EPA 8260	< 1	ug/L	4905
Dibromochloromethane	EPA 8260	< 0.5	ug/L	4905
Dibromomethane	EPA 8260	< 0.5	ug/L	4905
Dichlorodifluoromethane	EPA 8260	< 0.5	ug/L	4905
1,1-Dichloroethane	EPA 8260	< 0.5	ug/L	4905
1,1-Dichloroethene	EPA 8260	< 0.5	ug/L	4905
cis-1,2-Dichloroethene	EPA 8260	< 0.5	ug/L	4905
trans-1,2-Dichloethene	EPA 8260	< 0.5	ug/L	4905
1,2-Dichloropropane	EPA 8260	< 0.5	ug/L	4905
1,3-Dichloropropane	EPA 8260	< 0.5	ug/L	4905
2,2-Dichloropropane	EPA 8260	< 0.5	ug/L	4905
1,1-Dichloropropene	EPA 8260	< 0.5	ug/L	4905
cis-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	4905
trans-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	4905
Hexachlorobutadiene	EPA 8260	< 0.5	ug/L	4905

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Order No.: Q6697

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
Isopropylbenzene	EPA 8260	< 0.5	ug/L	4905
4-Isopropyltoluene	EPA 8260	< 0.5	ug/L	4905
Methylene Chloride	EPA 8260	< 5	ug/L	4905
Naphthalene	EPA 8260	< 5	ug/L	4905
n-Propylbenzene	EPA 8260	< 0.5	ug/L	4905
Styrene	EPA 8260	< 0.5	ug/L	4905
1,1,1,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	4905
1,1,2,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	4905
Tetrachloroethene	EPA 8260	< 0.5	ug/L	4905
1,2,3-Trichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,2,4-Trichlorobenzene	EPA 8260	< 0.5	ug/L	4905
1,1,1-Trichloroethane	EPA 8260	< 0.5	ug/L	4905
1,1,2-Trichloroethane	EPA 8260	< 0.5	ug/L	4905
Trichloroethene	EPA 8260	< 0.5	ug/L	4905
Trichlorofluoromethane	EPA 8260	< 0.5	ug/L	4905
1,2,3-Trichloropropane	EPA 8260	< 0.5	ug/L	4905
1,2,4-Trimethylbenzene	EPA 8260	< 0.5	ug/L	4905
1,3,5-Trimethylbenzene	EPA 8260	< 0.5	ug/L	4905
Vinyl Chloride	EPA 8260	< 0.5	ug/L	4905
Antimony	EPA 6020	< 0.008	mg/L	4899
Arsenic	EPA 6020	< 0.008	mg/L	4899
Barium	EPA 6020	< 0.008	mg/L	4899
Beryllium	EPA 6020	< 0.008	mg/L	4899
Cadmium	EPA 6020	< 0.008	mg/L	4899
Chromium	EPA 6020	< 0.008	mg/L	4899
Cobalt	EPA 6020	< 0.008	mg/L	4899
Copper	EPA 6020	< 0.008	mg/L	4899
Lead	EPA 6020	< 0.008	mg/L	4899
Molybdenum	EPA 6020	< 0.008	mg/L	4899
Nickel	EPA 6020	< 0.008	mg/L	4899
Selenium	EPA 6020	< 0.008	mg/L	4899
Silver	EPA 6020	< 0.008	mg/L	4899
Thallium	EPA 6020	< 0.008	mg/L	4899
Vanadium	EPA 6020	< 0.008	mg/L	4899
Zinc	EPA 6020	< 0.08	mg/L	4899

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Mercury	EPA 7470	104%	0.0050	mg/L	70 - 130	4864
TPH as Diesel, SGT	EPA 8015/LUFT	73%	5.0	mg/L	50 - 150	4913
Benzene	EPA 8260	106%	10	ug/L	80 - 120	4905
Toluene	EPA 8260	109%	10	ug/L	80 - 120	4905

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Quality Control Results

Order No.: Q6697

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Chlorobenzene	EPA 8260	108%	10	ug/L	81 - 115	4905
1,1-Dichloroethene	EPA 8260	103%	10	ug/L	63 - 129	4905
Trichloroethene	EPA 8260	107%	10	ug/L	77 - 117	4905
Antimony	EPA 6020	122%	1.0	mg/L	70 - 130	4899
Arsenic	EPA 6020	96%	1.0	mg/L	70 - 130	4899
Barium	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Beryllium	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Cadmium	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Chromium	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Cobalt	EPA 6020	106%	1.0	mg/L	75 - 125	4899
Copper	EPA 6020	107%	1.0	mg/L	75 - 125	4899
Lead	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Molybdenum	EPA 6020	97%	1.0	mg/L	75 - 125	4899
Nickel	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Selenium	EPA 6020	106%	4.0	mg/L	70 - 130	4899
Silver	EPA 6020	102%	1.0	mg/L	70 - 130	4899
Thallium	EPA 6020	103%	1.0	mg/L	70 - 130	4899
Vanadium	EPA 6020	103%	1.0	mg/L	75 - 125	4899
Zinc	EPA 6020	108%	1.0	mg/L	75 - 125	4899

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Mercury	EPA 7470	100%	98%	2	09-C18480	0.0050	mg/L	70 - 130	20	4864
Benzene	EPA 8260	104%	97%	7	09-C18478	10	ug/L	80 - 120	20	4905
Toluene	EPA 8260	106%	98%	8	09-C18478	10	ug/L	80 - 120	20	4905
Chlorobenzene	EPA 8260	107%	98%	9	09-C18478	10	ug/L	74 - 131	20	4905
1,1-Dichloroethene	EPA 8260	104%	97%	7	09-C18478	10	ug/L	59 - 145	20	4905
Trichloroethene	EPA 8260	107%	97%	10	09-C18478	10	ug/L	69 - 133	20	4905
Antimony	EPA 6020	106%	121%	13	09-C18479	1.0	mg/L	70 - 130	20	4899
Arsenic	EPA 6020	103%	102%	1	09-C18479	1.0	mg/L	70 - 130	20	4899
Barium	EPA 6020	82%	99%	18	09-C18479	1.0	mg/L	75 - 125	20	4899
Beryllium	EPA 6020	85%	97%	13	09-C18479	1.0	mg/L	75 - 125	20	4899
Cadmium	EPA 6020	103%	102%	1	09-C18479	1.0	mg/L	75 - 125	20	4899
Chromium	EPA 6020	86%	100%	15	09-C18479	1.0	mg/L	75 - 125	20	4899
Cobalt	EPA 6020	91%	102%	11	09-C18479	1.0	mg/L	75 - 125	20	4899
Copper	EPA 6020	96%	100%	4	09-C18479	1.0	mg/L	75 - 125	20	4899
Lead	EPA 6020	89%	103%	15	09-C18479	1.0	mg/L	75 - 125	20	4899
Molybdenum	EPA 6020	92%	99%	7	09-C18479	1.0	mg/L	75 - 125	20	4899
Nickel	EPA 6020	91%	101%	11	09-C18479	1.0	mg/L	75 - 125	20	4899
Selenium	EPA 6020	100%	109%	8	09-C18479	4.0	mg/L	70 - 130	20	4899
Silver	EPA 6020	91%	99%	9	09-C18479	1.0	mg/L	70 - 130	20	4899
Thallium	EPA 6020	90%	101%	11	09-C18479	1.0	mg/L	70 - 130	20	4899

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Quality Control Results

Order No.: Q6697

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Vanadium	EPA 6020	95%	99%	4	09-C18479	1.0	mg/L	75 - 125	20	4899
Zinc	EPA 6020	94%	106%	12	09-C18479	1.0	mg/L	75 - 125	20	4899

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
TPH as Diesel, SGT	EPA 8015/LUFT	LCS	3.6	3.5	4	mg/L	30.	4913

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Surrogate Report

Sample Number	Batch	Method	Surrogate	% Recovery	QC Limits
09-C18477	4905	EPA 8260	Dibromofluoromethane	96.	81-123
09-C18477	4905	EPA 8260	Toluene-d8	98.	78-116
09-C18477	4905	EPA 8260	4-BFB	94.	60-116
09-C18477	4905	EPA 8260	1,2-Dichloroethane-d4	95.	79-124
09-C18478	4905	EPA 8260	Dibromofluoromethane	102.	81-123
09-C18478	4905	EPA 8260	Toluene-d8	96.	78-116
09-C18478	4905	EPA 8260	4-BFB	95.	60-116
09-C18478	4905	EPA 8260	1,2-Dichloroethane-d4	106.	79-124
09-C18478	4913	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	103.	50-150
09-C18479	4905	EPA 8260	Dibromofluoromethane	101.	81-123
09-C18479	4905	EPA 8260	Toluene-d8	95.	78-116
09-C18479	4905	EPA 8260	4-BFB	93.	60-116
09-C18479	4905	EPA 8260	1,2-Dichloroethane-d4	106.	79-124
09-C18479	4913	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	82.	50-150
09-C18480	4905	EPA 8260	Dibromofluoromethane	102.	81-123
09-C18480	4905	EPA 8260	Toluene-d8	97.	78-116
09-C18480	4905	EPA 8260	4-BFB	97.	60-116
09-C18480	4905	EPA 8260	1,2-Dichloroethane-d4	109.	79-124
09-C18480	4913	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	78.	50-150
blank	4905	EPA 8260	Dibromofluoromethane	95.	81-123
LCS	4905	EPA 8260	Dibromofluoromethane	95.	81-123
09-C18478 MS	4905	EPA 8260	Dibromofluoromethane	100.	81-123
09C18478 MSD	4905	EPA 8260	Dibromofluoromethane	101.	81-123
blank	4905	EPA 8260	Toluene-d8	98.	78-116
LCS	4905	EPA 8260	Toluene-d8	100.	78-116
09-C18478 MS	4905	EPA 8260	Toluene-d8	100.	78-116
09C18478 MSD	4905	EPA 8260	Toluene-d8	100.	78-116
blank	4905	EPA 8260	4-BFB	95.	60-116
LCS	4905	EPA 8260	4-BFB	100.	60-116
09-C18478 MS	4905	EPA 8260	4-BFB	96.	60-116
09C18478 MSD	4905	EPA 8260	4-BFB	98.	60-116
blank	4905	EPA 8260	1,2-Dichloroethane-d4	90.	79-124
LCS	4905	EPA 8260	1,2-Dichloroethane-d4	87.	79-124
09-C18478 MS	4905	EPA 8260	1,2-Dichloroethane-d4	98.	79-124
09C18478 MSD	4905	EPA 8260	1,2-Dichloroethane-d4	97.	79-124
blank	4913	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	84.	50-150
LCS	4913	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	96.	50-150
LCS dup.	4913	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	88.	50-150

CHAIN-OF-CUSTODY RECORD

Q6700 OAK 16148

PROJECT NAME: MARSH LANDING

PROJECT NUMBER: 15317.000

RESULTS TO: jonathan.skaggs@amec.com

TURNAROUND TIME: 4 Day

SAMPLE SHIPMENT METHOD: Fed Ex

LABORATORY NAME: Creek Environmental

LABORATORY ADDRESS: San Luis Obispo

LABORATORY CONTACT: Judy

LABORATORY PHONE NUMBER:

CLIENT INFORMATION:

DATE: 12/15/09 PAGE 1 OF 1

REPORTING REQUIREMENTS:

GEOTRACKER REQUIRED YES NO

SITE SPECIFIC GLOBAL ID NO.

SAMPLERS (SIGNATURE):

ANALYSES

DATE	TIME	SAMPLE NUMBER	VOCs by 8260B	TPHd by 8015M	TPHmo by 8015M	Silica Gel Cleanup	Title 22 Metals 6010	Mercury 7471A	PCBs by 8082	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
12/15/09	1705	SB-1-GW	X	X	X	X	X	X		3 40mL VOA, 1 Amber, 1 Poly	W	→	See comment	Y	N	5	metals field filtered 18493
12/15/09	1755	SB-7-GW	X	X	X	X	X	X	X	3 40mL VOA, 2 Amber, 1 Poly	W	→	See comment	Y	N	6	metals field filtered 18494

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
SIGNATURE: [signature] PRINTED NAME: Tiffany Klitzke COMPANY: AMEC Geomatrix	12/15/09	1800	SIGNATURE: Cathy Wensloff PRINTED NAME: Cathy Wensloff COMPANY: Creek Env. Lab	12/16/09	11:05
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		

TOTAL NUMBER OF CONTAINERS: 11

SAMPLING COMMENTS: Please send results to jonathan.skaggs@amec.com, and Heidi.Dietrich@amec.com. Preservation for the bottles is 40mL VOAs with HCl, 1 L AMBERS with NO preservative, 250mL Polys with HNO3.

2101 Webster Street, 12th Floor
Oakland, California 94612-3066
Tel 510.663.4100 Fax 510.663.4141

amec

Custody Seal opened 12/16/09 11:05 KEW 3.8 Temp

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Date: December 22, 2009

CASE NARRATIVE Q6700

Client: **Amec Geomatrix**
Project: **PG&E Marsh Landing**
Sample(s): **09-C18493 to 09-C18494**
Sampled: **12/15/09** **Received:** **12/16/09**

Samples 09-C18493 to 09-C18494 were received at the laboratory at 3.8 °C with no anomaly except for the following remarks:

- PCBs analysis was subcontracted to American Scientific Laboratories.

Diesel range (C10-C25) and motor oil range (C25-C40) petroleum hydrocarbons (TPH) were extracted by separatory funnel method (EPA 3510C) and the extracts were treated with silica gel cleanup (EPA 3630C) prior to analysis by GC/FID (EPA 8015M).

Volatile organic compounds were extracted by purge-and-trap method (EPA 5030B) and analyzed by GC/MS (EPA 8260B).

CAM metals were digested by EPA 3010A method and analyzed by ICP-MS (EPA 6020), except for mercury, which was analyzed by CVAAS method (EPA 7470A).

All samples were extracted and analyzed within holding time. All analytical quality control parameters were within acceptable limits and there was no analytical anomaly except for the following remarks:

- TPH surrogate recovery for sample 09-C18494 was below QC limit due to matrix effects. TPH-diesel and TPH-motor oil were not detected in the sample.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18493
Order: Q6700
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-1-GW	Tiffany Klitzke	12/15/09@17:05	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.0005	1	mg/L	EPA 7470	12/18/09	12/18/09	4864
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	12/21/09	12/16/09	4908
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	12/21/09	12/16/09	4908
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	12/21/09		4909
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18493
Order: Q6700
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-1-GW	Tiffany Klitzke	12/15/09@17:05	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	12/21/09		4909
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
trans-1,2-Dichloethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4909
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4909
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909

CREEK ENVIRONMENTAL LABORATORIES, INC.
A Minority-owned Business Enterprise
141 SUBURBAN ROAD, SUITE C • SAN LUIS OBISPO, CA 93401 • (805) 545-9838 • FAX (805) 545-0107

Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18493
Order: Q6700
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-1-GW	Tiffany Klitzke	12/15/09@17:05	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Antimony	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Arsenic	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Barium	0.074	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Beryllium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cadmium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Chromium	0.013	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cobalt	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Copper	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Lead	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Molybdenum	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Nickel	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Selenium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Silver	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Thallium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Vanadium	Not Detected	0.01	2	mg/L	EPA 6020	12/21/09	12/18/09	4899
Zinc	Not Detected	0.08	1	mg/L	EPA 6020	12/21/09	12/18/09	4899

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18493
Order: Q6700
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-1-GW	Tiffany Klitzke	12/15/09@17:05	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.

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Jonathan Skaggs	Log Number: 09-C18494
AMEC Geomatrix	Order: Q6700
2101 Webster St.	Project: Marsh Landing
Oakland, CA 94612	Received: 12/16/09
	Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-GW	Tiffany Klitzke	12/15/09@17:55	Aqueous

Analyte		Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury		Not Detected	0.0005	1	mg/L	EPA 7470	12/18/09	12/18/09	4864
TPH as Diesel, SGT	< 0.05 UJ	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	12/21/09	12/16/09	4908
TPH as Motor Oil, SGT	< 0.1 UJ	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	12/21/09	12/16/09	4908
Benzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Toluene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Ethylbenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
m,p-Xylene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
o-Xylene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Methyl t-Butyl Ether (MTBE)		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Chlorobenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dichlorobenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,3-Dichlorobenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,4-Dichlorobenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dichloroethane (EDC)		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dibromoethane (EDB)		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromobenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromochloromethane		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromodichloromethane		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromoform		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Bromomethane		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
n-Butylbenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
sec-Butyl Benzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
t-Butylbenzene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Carbon Tetrachloride		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Chloroethane		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
2-Chloroethylvinyl ether		Not Detected	20	1	ug/L	EPA 8260	12/21/09		4909
Chloroform		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Chloromethane		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
2-Chlorotoluene		Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18494
Order: Q6700
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-GW	Tiffany Klitzke	12/15/09@17:55	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	12/21/09		4909
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
trans-1,2-Dichloethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4909
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	12/21/09		4909
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18494
Order: Q6700
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-GW	Tiffany Klitzke	12/15/09@17:55	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	12/21/09		4909
Antimony	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Arsenic	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Barium	0.051	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Beryllium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cadmium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Chromium	0.021	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Cobalt	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Copper	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Lead	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Molybdenum	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Nickel	0.008	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Selenium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Silver	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Thallium	Not Detected	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Vanadium	0.019	0.008	1	mg/L	EPA 6020	12/21/09	12/18/09	4899
Zinc	Not Detected	0.08	1	mg/L	EPA 6020	12/21/09	12/18/09	4899

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18494
Order: Q6700
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-GW	Tiffany Klitzke	12/15/09@17:55	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Quality Control Results

Order No.: Q6700
Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
Mercury	EPA 7470	< 0.0005	mg/L	4864
TPH as Diesel, SGT	EPA 8015/LUFT	< 0.05	mg/L	4908
TPH as Motor Oil, SGT	EPA 8015/LUFT	< 0.1	mg/L	4908
Benzene	EPA 8260	< 0.5	ug/L	4909
Toluene	EPA 8260	< 0.5	ug/L	4909
Ethylbenzene	EPA 8260	< 0.5	ug/L	4909
m,p-Xylene	EPA 8260	< 0.5	ug/L	4909
o-Xylene	EPA 8260	< 0.5	ug/L	4909
Methyl t-Butyl Ether (MTBE)	EPA 8260	< 0.5	ug/L	4909
Chlorobenzene	EPA 8260	< 0.5	ug/L	4909
1,2-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4909
1,3-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4909
1,4-Dichlorobenzene	EPA 8260	< 0.5	ug/L	4909
1,2-Dichloroethane (EDC)	EPA 8260	< 0.5	ug/L	4909
1,2-Dibromoethane (EDB)	EPA 8260	< 0.5	ug/L	4909
Bromobenzene	EPA 8260	< 0.5	ug/L	4909
Bromochloromethane	EPA 8260	< 0.5	ug/L	4909
Bromodichloromethane	EPA 8260	< 0.5	ug/L	4909
Bromoform	EPA 8260	< 0.5	ug/L	4909
Bromomethane	EPA 8260	< 0.5	ug/L	4909
n-Butylbenzene	EPA 8260	< 0.5	ug/L	4909
sec-Butyl Benzene	EPA 8260	< 0.5	ug/L	4909
t-Butylbenzene	EPA 8260	< 0.5	ug/L	4909
Carbon Tetrachloride	EPA 8260	< 0.5	ug/L	4909
Chloroethane	EPA 8260	< 0.5	ug/L	4909
2-Chloroethylvinyl ether	EPA 8260	< 20	ug/L	4909
Chloroform	EPA 8260	< 0.5	ug/L	4909
Chloromethane	EPA 8260	< 0.5	ug/L	4909
2-Chlorotoluene	EPA 8260	< 0.5	ug/L	4909
4-Chlorotoluene	EPA 8260	< 0.5	ug/L	4909
1,2-Dibromo-3-Chloropropane	EPA 8260	< 1	ug/L	4909
Dibromochloromethane	EPA 8260	< 0.5	ug/L	4909
Dibromomethane	EPA 8260	< 0.5	ug/L	4909
Dichlorodifluoromethane	EPA 8260	< 0.5	ug/L	4909
1,1-Dichloroethane	EPA 8260	< 0.5	ug/L	4909
1,1-Dichloroethene	EPA 8260	< 0.5	ug/L	4909
cis-1,2-Dichloroethene	EPA 8260	< 0.5	ug/L	4909
trans-1,2-Dichloethene	EPA 8260	< 0.5	ug/L	4909
1,2-Dichloropropane	EPA 8260	< 0.5	ug/L	4909
1,3-Dichloropropane	EPA 8260	< 0.5	ug/L	4909
2,2-Dichloropropane	EPA 8260	< 0.5	ug/L	4909
1,1-Dichloropropene	EPA 8260	< 0.5	ug/L	4909
cis-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	4909
trans-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	4909
Hexachlorobutadiene	EPA 8260	< 0.5	ug/L	4909

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Quality Control Results

Order No.: Q6700

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
Isopropylbenzene	EPA 8260	< 0.5	ug/L	4909
4-Isopropyltoluene	EPA 8260	< 0.5	ug/L	4909
Methylene Chloride	EPA 8260	< 5	ug/L	4909
Naphthalene	EPA 8260	< 5	ug/L	4909
n-Propylbenzene	EPA 8260	< 0.5	ug/L	4909
Styrene	EPA 8260	< 0.5	ug/L	4909
1,1,1,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	4909
1,1,2,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	4909
Tetrachloroethene	EPA 8260	< 0.5	ug/L	4909
1,2,3-Trichlorobenzene	EPA 8260	< 0.5	ug/L	4909
1,2,4-Trichlorobenzene	EPA 8260	< 0.5	ug/L	4909
1,1,1-Trichloroethane	EPA 8260	< 0.5	ug/L	4909
1,1,2-Trichloroethane	EPA 8260	< 0.5	ug/L	4909
Trichloroethene	EPA 8260	< 0.5	ug/L	4909
Trichlorofluoromethane	EPA 8260	< 0.5	ug/L	4909
1,2,3-Trichloropropane	EPA 8260	< 0.5	ug/L	4909
1,2,4-Trimethylbenzene	EPA 8260	< 0.5	ug/L	4909
1,3,5-Trimethylbenzene	EPA 8260	< 0.5	ug/L	4909
Vinyl Chloride	EPA 8260	< 0.5	ug/L	4909
Antimony	EPA 6020	< 0.008	mg/L	4899
Arsenic	EPA 6020	< 0.008	mg/L	4899
Barium	EPA 6020	< 0.008	mg/L	4899
Beryllium	EPA 6020	< 0.008	mg/L	4899
Cadmium	EPA 6020	< 0.008	mg/L	4899
Chromium	EPA 6020	< 0.008	mg/L	4899
Cobalt	EPA 6020	< 0.008	mg/L	4899
Copper	EPA 6020	< 0.008	mg/L	4899
Lead	EPA 6020	< 0.008	mg/L	4899
Molybdenum	EPA 6020	< 0.008	mg/L	4899
Nickel	EPA 6020	< 0.008	mg/L	4899
Selenium	EPA 6020	< 0.008	mg/L	4899
Silver	EPA 6020	< 0.008	mg/L	4899
Thallium	EPA 6020	< 0.008	mg/L	4899
Vanadium	EPA 6020	< 0.008	mg/L	4899
Zinc	EPA 6020	< 0.08	mg/L	4899

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Mercury	EPA 7470	104%	0.0050	mg/L	70 - 130	4864
TPH as Diesel, SGT	EPA 8015/LUFT	71%	5.0	mg/L	50 - 150	4908
Benzene	EPA 8260	107%	10	ug/L	80 - 120	4909
Toluene	EPA 8260	109%	10	ug/L	80 - 120	4909

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Order No.: Q6700

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Chlorobenzene	EPA 8260	109%	10	ug/L	81 - 115	4909
1,1-Dichloroethene	EPA 8260	106%	10	ug/L	63 - 129	4909
Trichloroethene	EPA 8260	109%	10	ug/L	77 - 117	4909
Antimony	EPA 6020	122%	1.0	mg/L	70 - 130	4899
Arsenic	EPA 6020	96%	1.0	mg/L	70 - 130	4899
Barium	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Beryllium	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Cadmium	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Chromium	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Cobalt	EPA 6020	106%	1.0	mg/L	75 - 125	4899
Copper	EPA 6020	107%	1.0	mg/L	75 - 125	4899
Lead	EPA 6020	105%	1.0	mg/L	75 - 125	4899
Molybdenum	EPA 6020	97%	1.0	mg/L	75 - 125	4899
Nickel	EPA 6020	101%	1.0	mg/L	75 - 125	4899
Selenium	EPA 6020	106%	4.0	mg/L	70 - 130	4899
Silver	EPA 6020	102%	1.0	mg/L	70 - 130	4899
Thallium	EPA 6020	103%	1.0	mg/L	70 - 130	4899
Vanadium	EPA 6020	103%	1.0	mg/L	75 - 125	4899
Zinc	EPA 6020	108%	1.0	mg/L	75 - 125	4899

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Mercury	EPA 7470	100%	98%	2	09-C18480	0.0050	mg/L	70 - 130	20	4864
Antimony	EPA 6020	106%	121%	13	09-C18479	1.0	mg/L	70 - 130	20	4899
Arsenic	EPA 6020	103%	102%	1	09-C18479	1.0	mg/L	70 - 130	20	4899
Barium	EPA 6020	82%	99%	18	09-C18479	1.0	mg/L	75 - 125	20	4899
Beryllium	EPA 6020	85%	97%	13	09-C18479	1.0	mg/L	75 - 125	20	4899
Cadmium	EPA 6020	103%	102%	1	09-C18479	1.0	mg/L	75 - 125	20	4899
Chromium	EPA 6020	86%	100%	15	09-C18479	1.0	mg/L	75 - 125	20	4899
Cobalt	EPA 6020	91%	102%	11	09-C18479	1.0	mg/L	75 - 125	20	4899
Copper	EPA 6020	96%	100%	4	09-C18479	1.0	mg/L	75 - 125	20	4899
Lead	EPA 6020	89%	103%	15	09-C18479	1.0	mg/L	75 - 125	20	4899
Molybdenum	EPA 6020	92%	99%	7	09-C18479	1.0	mg/L	75 - 125	20	4899
Nickel	EPA 6020	91%	101%	11	09-C18479	1.0	mg/L	75 - 125	20	4899
Selenium	EPA 6020	100%	109%	8	09-C18479	4.0	mg/L	70 - 130	20	4899
Silver	EPA 6020	91%	99%	9	09-C18479	1.0	mg/L	70 - 130	20	4899
Thallium	EPA 6020	90%	101%	11	09-C18479	1.0	mg/L	70 - 130	20	4899
Vanadium	EPA 6020	95%	99%	4	09-C18479	1.0	mg/L	75 - 125	20	4899
Zinc	EPA 6020	94%	106%	12	09-C18479	1.0	mg/L	75 - 125	20	4899

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Quality Control Results

Order No.: Q6700

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
TPH as Diesel, SGT	EPA 8015/LUFT	LCS	3.5	3.5	1	mg/L	30.	4908
Benzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Toluene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Ethylbenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
m,p-Xylene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
o-Xylene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Methyl t-Butyl Ether (MTBE)	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
Chlorobenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,2-Dichlorobenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,3-Dichlorobenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,4-Dichlorobenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,2-Dichloroethane (EDC)	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,2-Dibromoethane (EDB)	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Bromobenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Bromochloromethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Bromodichloromethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Bromoform	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Bromomethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
n-Butylbenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
sec-Butyl Benzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
t-Butylbenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Carbon Tetrachloride	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Chloroethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
2-Chloroethylvinyl ether	EPA 8260	09-C18493	< 20	< 20	0	ug/L	40.	4909
Chloroform	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Chloromethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
2-Chlorotoluene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
4-Chlorotoluene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,2-Dibromo-3-Chloropropane	EPA 8260	09-C18493	< 1	< 1	0	ug/L	30.	4909
Dibromochloromethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Dibromomethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Dichlorodifluoromethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
1,1-Dichloroethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,1-Dichloroethene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
cis-1,2-Dichloroethene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
trans-1,2-Dichloethene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,2-Dichloropropane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,3-Dichloropropane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
2,2-Dichloropropane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,1-Dichloropropene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
cis-1,3-Dichloropropene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
trans-1,3-Dichloropropene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Hexachlorobutadiene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
Isopropylbenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909

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Quality Control Results

Order No.: Q6700

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
4-Isopropyltoluene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Methylene Chloride	EPA 8260	09-C18493	< 5	< 5	0	ug/L	30.	4909
Naphthalene	EPA 8260	09-C18493	< 5	< 5	0	ug/L	30.	4909
n-Propylbenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Styrene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,1,1,2-Tetrachloroethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,1,2,2-Tetrachloroethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Tetrachloroethene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,2,3-Trichlorobenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
1,2,4-Trichlorobenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
1,1,1-Trichloroethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,1,2-Trichloroethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Trichloroethene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Trichlorofluoromethane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
1,2,3-Trichloropropane	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909
1,2,4-Trimethylbenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
1,3,5-Trimethylbenzene	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	20.	4909
Vinyl Chloride	EPA 8260	09-C18493	< 0.5	< 0.5	0	ug/L	30.	4909

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Surrogate Report

Sample Number	Batch	Method	Surrogate	% Recovery	QC Limits
09-C18493	4909	EPA 8260	Dibromofluoromethane	103.	81-123
09-C18493	4909	EPA 8260	Toluene-d8	96.	78-116
09-C18493	4909	EPA 8260	4-BFB	94.	60-116
09-C18493	4909	EPA 8260	1,2-Dichloroethane-d4	108.	79-124
09-C18493	4908	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	76.	50-150
09-C18494	4909	EPA 8260	Dibromofluoromethane	104.	81-123
09-C18494	4909	EPA 8260	Toluene-d8	96.	78-116
09-C18494	4909	EPA 8260	4-BFB	95.	60-116
09-C18494	4909	EPA 8260	1,2-Dichloroethane-d4	110.	79-124
09-C18494	4908	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	36.	50-150
blank	4909	EPA 8260	Dibromofluoromethane	104.	81-123
LCS	4909	EPA 8260	Dibromofluoromethane	99.	81-123
09-C18493 dup.	4909	EPA 8260	Dibromofluoromethane	107.	81-123
blank	4909	EPA 8260	Toluene-d8	96.	78-116
LCS	4909	EPA 8260	Toluene-d8	100.	78-116
09-C18493 dup.	4909	EPA 8260	Toluene-d8	95.	78-116
blank	4909	EPA 8260	4-BFB	96.	60-116
LCS	4909	EPA 8260	4-BFB	97.	60-116
09-C18493 dup.	4909	EPA 8260	4-BFB	92.	60-116
blank	4909	EPA 8260	1,2-Dichloroethane-d4	109.	79-124
LCS	4909	EPA 8260	1,2-Dichloroethane-d4	96.	79-124
09-C18493 dup.	4909	EPA 8260	1,2-Dichloroethane-d4	115.	79-124
blank	4908	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	83.	50-150
LCS	4908	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	88.	50-150
LCS dup.	4908	EPA 8015M/LUFT DRO	Hexacosane (AQ/SGT)	93.	50-150

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

Creek Environmental Labs, Inc.
141 Suburban Rd Suite C-5
San Luis Obispo, CA 93401-

Telephone: (805)545-9838
Attn: Orval Osborne

Page: 2

Project ID: Q6700

ASL Job Number	Submitted	Client
44144	12/17/2009	CREEK

Method: 8082, Polychlorinated Biphenyls(PCBs) by Gas Chromatography

QC Batch No: 122109-1

Our Lab I.D.		246409				
Client Sample I.D.		(18494) SB-7-GW				
Date Sampled		12/15/2009				
Date Prepared		12/21/2009				
Preparation Method						
Date Analyzed		12/21/2009				
Matrix		Groundwater				
Units		ug/L				
Dilution Factor		1				
Analytes	PQL	Results				
Aroclor-1016 (PCB-1016)	0.650	ND				
Aroclor-1221 (PCB-1221)	1.00	ND				
Aroclor-1232 (PCB-1232)	0.650	ND				
Aroclor-1242 (PCB-1242)	0.650	ND				
Aroclor-1248 (PCB-1248)	0.650	ND				
Aroclor-1254 (PCB-1254)	0.650	ND				
Aroclor-1260 (PCB-1260)	0.650	ND				

Our Lab I.D.		246409				
Surrogates	% Rec.Limit	% Rec.				
Surrogate Percent Recovery						
Decachlorobiphenyl	43-169	71				

QUALITY CONTROL REPORT

QC Batch No: 122109-1

Analytes	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit					
Aroclor-1260 (PCB-1260)	108	105	2.8	39-150	<30					

CHAIN-OF-CUSTODY RECORD

Q6701 **OAK** 16152

PROJECT NAME: MARSH LANDING

PROJECT NUMBER: 15317.000

RESULTS TO: See comments

TURNAROUND TIME: 4 DAY

SAMPLE SHIPMENT METHOD: Fed Ex

LABORATORY NAME: Creek Env. Lab

LABORATORY ADDRESS: San Luis Obispo

LABORATORY CONTACT: Judy

LABORATORY PHONE NUMBER:

CLIENT INFORMATION:

DATE: 12/15/09 PAGE 1 OF 1

REPORTING REQUIREMENTS:

GEOTRACKER REQUIRED YES NO

SITE SPECIFIC GLOBAL ID NO.

SAMPLERS (SIGNATURE):

ANALYSES

DATE	TIME	SAMPLE NUMBER	TPH diesel 8015M	TPH motor oil 8015M	Silica Gel Cleanup	PAHs 8270C SIM	PCBs 8082	VOCs by 8260B	Title 22 Metals 6010	Mercury 7471A	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS
12/15/09	0835	SB-8-0.5	X	X	X	X	X		X	X	6 inch liner	S	N	None	Y	N	1	18495
	0837	SB-8-1.0	X	X	X		X				6 inch liner	S	N	None	Y	N	1	18496
	0848	SB-7-1.0	X	X	X		X	X	X	X	1 liner, 3 40mL VOAs	S	N	→	Y	N	4	Liner unpreserved VOAs - MeOH, NaHSO4 18497
	0855	SB-7-2.0	X	X	X		X	X	X	X	1 liner, 3 40mL VOAs	S	N	→	Y	N	4	Liner unpreserved VOAs - MeOH + NaHSO4 18498
	0920	SB-7-3.5	X	X	X						6 inch liner	S	N	None	Y	N	1	18499
	0950	SB-11-1.0	X	X	X	X	X				6 inch liner	S	N	None	Y	N	1	18500
	0955	SB-11-3.0				X					6 inch liner	S	N	None	Y	N	1	18501

Added per Jonathan e-mail

TOTAL NUMBER OF CONTAINERS: 13

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
SIGNATURE: [signature] PRINTED NAME: Tiffany Klitzke COMPANY: AMEC Geomatrix	12/15/09	1630	SIGNATURE: [signature] PRINTED NAME: Kathy Wenslott COMPANY: Creek Env. Lab	12/16/09	11:06
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		
SIGNATURE: PRINTED NAME: COMPANY:			SIGNATURE: PRINTED NAME: COMPANY:		

SAMPLING COMMENTS: ① Send results to jonathan.skaggs@amec.com and Heidi.Dietrich@amec.com
② SPLIT samples SB-8-0.5, SB-8-1.0, SB-7-1.0, SB-7-2.0, SB-7-3.5 and SB-11-1.0 and place on HOLD for TPH fractionation. If analyzed, send results in a separate report.

2101 Webster Street, 12th Floor
Oakland, California 94612-3066
Tel 510.663.4100 Fax 510.663.4141

amec

Custody seal opened 12/16/09 11:06 KEW

3.8 Temp.

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Date: December 22, 2009

CASE NARRATIVE Q6701

Client: **Amec Geomatrix**
Project: **PG&E Marsh Landing**
Sample(s): **09-C18495 to 09-C18501**
Sampled: **12/15/09** **Received: 12/16/09**

Samples 09-C18495 to 09-C18501 were received at the laboratory at 3.8 °C with no anomaly except for the following remarks:

- PCBs analysis was subcontracted to American Scientific Laboratories.

Diesel range (C10-C25) and motor oil range (C25-C40) petroleum hydrocarbons (TPH) were extracted by mechanical shaker method (CA LUFT) and the extracts were treated with silica gel cleanup (EPA 3630C) prior to analysis by GC/FID (EPA 8015M).

Polynuclear aromatic hydrocarbons (PAH) were extracted by ultrasonic method (EPA 3550B) and analyzed by selective ion mode GC/MS (EPA 8270C-SIM).

Volatile organic compounds were extracted by purge-and-trap method (EPA 5030B) and analyzed by GC/MS (EPA 8260B).

- Samples 09-C18497 and 09-C18498 were provided with EPA 5035 vials but the soil quantity in the vials was too large to perform the closed-system purge-and-trap method. So the regular purge-and-trap method was performed with soil samples taken from the tubes. (The soil amount collected in each vial was about 15 grams, instead of the normal size of 5 grams. The large soil quantity prevents proper agitation by the stir-bars and also causes blockage of the purge pathway.)

CAM metals were digested by EPA 3050B method and analyzed by ICP-MS (EPA 6020), except for mercury, which was analyzed by CVAAS method (EPA 7471A).

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All samples were extracted and analyzed within holding time. All analytical quality control parameters were within acceptable limits. There was no analytical anomaly except for the above comments and the following remarks:

- The methylene chloride result reported in the VOC analysis of sample 09-C18497 is suspect. It is likely due to laboratory contamination as methylene chloride is a common laboratory extraction solvent. Sample 09-C18497 was taken from the tube, instead of the 5035 vial, for reasons stated above. By then the sample tube had already been open and had been exposed to the atmosphere in the extraction laboratory.

- The VOC analysis on sample 09-C18498 was performed in two ways: taking 5 grams of subsample from the tube and also from the 5035 vial. The results clearly confirm the detection of methylene chloride was due to laboratory contamination: The subsample of 09-C18498 from 5035 vial was not detected in methylene chloride but the subsample from the tube had substantial detection of methylene chloride.

- There was no more viable 5035 vials left for 09-C18497 to perform reanalysis to confirm that the detected methylene chloride was due to laboratory contamination. All the vials had been consumed after multiple attempts to analyze the unusually large soil volumes failed. The methylene chloride result for 09-C18497 was therefore reported with qualification.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18495
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-8-0.5	Tiffany Klitzke	12/15/09@08:35	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benz[a]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[a]pyrene	12	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[b]fluoranthene	23	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[k]fluoranthene	16	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Chrysene	24	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Arsenic	1.8	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Barium	35	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Chromium	13	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Cobalt	3.8	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Copper	6.2	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Lead	2.9	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Molybdenum	0.5	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Jonathan Skaggs
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2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18495
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-8-0.5	Tiffany Klitzke	12/15/09@08:35	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Nickel	16	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Vanadium	19	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Zinc	17	4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Log Number: 09-C18496
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-8-1.0	Tiffany Klitzke	12/15/09@08:37	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Log Number: 09-C18497
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-1.0	Tiffany Klitzke	12/15/09@08:48	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
TPH as Motor Oil, SGT	12	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
Benzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromochloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromodichloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromoform	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromomethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
t-Butylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
n-Butylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
sec-Butyl Benzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Carbon Tetrachloride	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Chlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Chloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
2-Chloroethylvinyl ether	Not Detected	100	1	ug/Kg	EPA 8260	12/22/09		4927
Chloroform	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Chloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
2-Chlorotoluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
4-Chlorotoluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dibromo-3-Chloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Dibromochloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Dibromomethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dibromoethane (EDB)	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Dichlorodifluoromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,3-Dichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,4-Dichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1-Dichloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927

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Log Number: 09-C18497
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-1.0	Tiffany Klitzke	12/15/09@08:48	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2-Dichloroethane (EDC)	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1-Dichloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
cis-1,2-Dichloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
trans-1,2-Dichloethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,3-Dichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
2,2-Dichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1-Dichloropropene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
cis-1,3-Dichloropropene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
trans-1,3-Dichloropropene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Ethylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Hexachlorobutadiene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Isopropylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
4-Isopropyltoluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Methylene Chloride	<51 U	20	1	ug/Kg	EPA 8260	12/22/09		4927
Methyl t-Butyl Ether (MTBE)	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Naphthalene	Not Detected	20	1	ug/Kg	EPA 8260	12/22/09		4927
n-Propylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Styrene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,1,2-Tetrachloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,2,2-Tetrachloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Tetrachloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Toluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2,3-Trichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2,4-Trichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,1-Trichloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,2-Trichloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Trichloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Trichlorofluoromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927

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Log Number: 09-C18497
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-1.0	Tiffany Klitzke	12/15/09@08:48	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2,4-Trimethylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,3,5-Trimethylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Vinyl Chloride	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
m,p-Xylene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
o-Xylene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Arsenic	3.2	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Barium	59	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Chromium	18	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Cobalt	4.9	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Copper	10	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Lead	14	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Molybdenum	0.4	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Nickel	22	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Vanadium	26	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Zinc	56	4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES, INC.
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Log Number: 09-C18497
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-1.0	Tiffany Klitzke	12/15/09@08:48	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.
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2101 Webster St.
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Log Number: 09-C18498
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-2.0	Tiffany Klitzke	12/15/09@08:55	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.04	1	mg/Kg	EPA 7471	12/18/09	12/17/09	4859
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
Benzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromochloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromodichloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromoform	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Bromomethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
t-Butylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
n-Butylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
sec-Butyl Benzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Carbon Tetrachloride	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Chlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Chloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
2-Chloroethylvinyl ether	Not Detected	100	1	ug/Kg	EPA 8260	12/22/09		4927
Chloroform	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Chloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
2-Chlorotoluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
4-Chlorotoluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dibromo-3-Chloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Dibromochloromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Dibromomethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dibromoethane (EDB)	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Dichlorodifluoromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,3-Dichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,4-Dichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1-Dichloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927

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Log Number: 09-C18498
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-2.0	Tiffany Klitzke	12/15/09@08:55	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2-Dichloroethane (EDC)	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1-Dichloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
cis-1,2-Dichloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
trans-1,2-Dichloethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2-Dichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,3-Dichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
2,2-Dichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1-Dichloropropene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
cis-1,3-Dichloropropene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
trans-1,3-Dichloropropene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Ethylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Hexachlorobutadiene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Isopropylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
4-Isopropyltoluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Methylene Chloride	Not Detected	20	1	ug/Kg	EPA 8260	12/22/09		4927
Methyl t-Butyl Ether (MTBE)	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Naphthalene	Not Detected	20	1	ug/Kg	EPA 8260	12/22/09		4927
n-Propylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Styrene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,1,2-Tetrachloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,2,2-Tetrachloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Tetrachloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Toluene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2,3-Trichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2,4-Trichlorobenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,1-Trichloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,1,2-Trichloroethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Trichloroethene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Trichlorofluoromethane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18498
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-2.0	Tiffany Klitzke	12/15/09@08:55	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichloropropane	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,2,4-Trimethylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
1,3,5-Trimethylbenzene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Vinyl Chloride	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
m,p-Xylene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
o-Xylene	Not Detected	5	1	ug/Kg	EPA 8260	12/22/09		4927
Antimony	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Arsenic	1.3	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Barium	45	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Beryllium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Cadmium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Chromium	13	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Cobalt	4.2	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Copper	6.5	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Lead	2.3	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Molybdenum	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Nickel	15	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Selenium	Not Detected	0.5	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Silver	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Thallium	Not Detected	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Vanadium	19	0.4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887
Zinc	17	4	1	mg/Kg	EPA 6020	12/21/09	12/17/09	4887

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18498
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-2.0	Tiffany Klitzke	12/15/09@08:55	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18499
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-3.5	Tiffany Klitzke	12/15/09@09:20	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
TPH as Motor Oil, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18500
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-11-1.0	Tiffany Klitzke	12/15/09@09:50	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
TPH as Motor Oil, SGT	25	10	1	mg/Kg	EPA 8015/LUFT	12/21/09	12/17/09	4916
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benz[a]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[a]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[b]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[k]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Chrysene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18501
Order: Q6701
Project: Marsh Landing
Received: 12/16/09
Printed: 12/22/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-11-3.0	Tiffany Klitzke	12/15/09@09:55	Solid

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Acenaphthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Acenaphthylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benz[a]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[a]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[b]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[ghi]perylene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Benzo[k]fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Chrysene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Dibenz[a,h]anthracene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Fluoranthene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Fluorene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Indeno[1,2,3-cd]pyrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Naphthalene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Phenanthrene	Not Detected	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881
Pyrene	10	10	1	ug/Kg	EPA 8270 SIM	12/18/09	12/17/09	4881

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Quality Control Results

Order No.: Q6701
Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
Mercury	EPA 7471	< 0.04	mg/Kg	4859
TPH as Diesel, SGT	EPA 8015/LUFT	< 10	mg/Kg	4916
TPH as Motor Oil, SGT	EPA 8015/LUFT	< 10	mg/Kg	4916
Benzene	EPA 8260	< 5	ug/Kg	4927
Bromobenzene	EPA 8260	< 5	ug/Kg	4927
Bromochloromethane	EPA 8260	< 5	ug/Kg	4927
Bromodichloromethane	EPA 8260	< 5	ug/Kg	4927
Bromoform	EPA 8260	< 5	ug/Kg	4927
Bromomethane	EPA 8260	< 5	ug/Kg	4927
t-Butylbenzene	EPA 8260	< 5	ug/Kg	4927
n-Butylbenzene	EPA 8260	< 5	ug/Kg	4927
sec-Butyl Benzene	EPA 8260	< 5	ug/Kg	4927
Carbon Tetrachloride	EPA 8260	< 5	ug/Kg	4927
Chlorobenzene	EPA 8260	< 5	ug/Kg	4927
Chloroethane	EPA 8260	< 5	ug/Kg	4927
2-Chloroethylvinyl ether	EPA 8260	< 100	ug/Kg	4927
Chloroform	EPA 8260	< 5	ug/Kg	4927
Chloromethane	EPA 8260	< 5	ug/Kg	4927
2-Chlorotoluene	EPA 8260	< 5	ug/Kg	4927
4-Chlorotoluene	EPA 8260	< 5	ug/Kg	4927
1,2-Dibromo-3-Chloropropane	EPA 8260	< 5	ug/Kg	4927
Dibromochloromethane	EPA 8260	< 5	ug/Kg	4927
Dibromomethane	EPA 8260	< 5	ug/Kg	4927
1,2-Dibromoethane (EDB)	EPA 8260	< 5	ug/Kg	4927
Dichlorodifluoromethane	EPA 8260	< 5	ug/Kg	4927
1,2-Dichlorobenzene	EPA 8260	< 5	ug/Kg	4927
1,3-Dichlorobenzene	EPA 8260	< 5	ug/Kg	4927
1,4-Dichlorobenzene	EPA 8260	< 5	ug/Kg	4927
1,1-Dichloroethane	EPA 8260	< 5	ug/Kg	4927
1,2-Dichloroethane (EDC)	EPA 8260	< 5	ug/Kg	4927
1,1-Dichloroethene	EPA 8260	< 5	ug/Kg	4927
cis-1,2-Dichloroethene	EPA 8260	< 5	ug/Kg	4927
trans-1,2-Dichloethene	EPA 8260	< 5	ug/Kg	4927
1,2-Dichloropropane	EPA 8260	< 5	ug/Kg	4927
1,3-Dichloropropane	EPA 8260	< 5	ug/Kg	4927
2,2-Dichloropropane	EPA 8260	< 5	ug/Kg	4927
1,1-Dichloropropene	EPA 8260	< 5	ug/Kg	4927
cis-1,3-Dichloropropene	EPA 8260	< 5	ug/Kg	4927
trans-1,3-Dichloropropene	EPA 8260	< 5	ug/Kg	4927
Ethylbenzene	EPA 8260	< 5	ug/Kg	4927
Hexachlorobutadiene	EPA 8260	< 5	ug/Kg	4927
Isopropylbenzene	EPA 8260	< 5	ug/Kg	4927
4-Isopropyltoluene	EPA 8260	< 5	ug/Kg	4927
Methylene Chloride	EPA 8260	< 20	ug/Kg	4927
Methyl t-Butyl Ether (MTBE)	EPA 8260	< 5	ug/Kg	4927

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Order No.: Q6701

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
Naphthalene	EPA 8260	< 20	ug/Kg	4927
n-Propylbenzene	EPA 8260	< 5	ug/Kg	4927
Styrene	EPA 8260	< 5	ug/Kg	4927
1,1,1,2-Tetrachloroethane	EPA 8260	< 5	ug/Kg	4927
1,1,2,2-Tetrachloroethane	EPA 8260	< 5	ug/Kg	4927
Tetrachloroethene	EPA 8260	< 5	ug/Kg	4927
Toluene	EPA 8260	< 5	ug/Kg	4927
1,2,3-Trichlorobenzene	EPA 8260	< 5	ug/Kg	4927
1,2,4-Trichlorobenzene	EPA 8260	< 5	ug/Kg	4927
1,1,1-Trichloroethane	EPA 8260	< 5	ug/Kg	4927
1,1,2-Trichloroethane	EPA 8260	< 5	ug/Kg	4927
Trichloroethene	EPA 8260	< 5	ug/Kg	4927
Trichlorofluoromethane	EPA 8260	< 5	ug/Kg	4927
1,2,3-Trichloropropane	EPA 8260	< 5	ug/Kg	4927
1,2,4-Trimethylbenzene	EPA 8260	< 5	ug/Kg	4927
1,3,5-Trimethylbenzene	EPA 8260	< 5	ug/Kg	4927
Vinyl Chloride	EPA 8260	< 5	ug/Kg	4927
m,p-Xylene	EPA 8260	< 5	ug/Kg	4927
o-Xylene	EPA 8260	< 5	ug/Kg	4927
Acenaphthene	EPA 8270 SIM	< 10	ug/Kg	4881
Acenaphthylene	EPA 8270 SIM	< 10	ug/Kg	4881
Anthracene	EPA 8270 SIM	< 10	ug/Kg	4881
Benz[a]anthracene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[a]pyrene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[b]fluoranthene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[ghi]perylene	EPA 8270 SIM	< 10	ug/Kg	4881
Benzo[k]fluoranthene	EPA 8270 SIM	< 10	ug/Kg	4881
Chrysene	EPA 8270 SIM	< 10	ug/Kg	4881
Dibenz[a,h]anthracene	EPA 8270 SIM	< 10	ug/Kg	4881
Fluoranthene	EPA 8270 SIM	< 10	ug/Kg	4881
Fluorene	EPA 8270 SIM	< 10	ug/Kg	4881
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	< 10	ug/Kg	4881
Naphthalene	EPA 8270 SIM	< 10	ug/Kg	4881
Phenanthrene	EPA 8270 SIM	< 10	ug/Kg	4881
Pyrene	EPA 8270 SIM	< 10	ug/Kg	4881
Antimony	EPA 6020	< 0.4	mg/Kg	4887
Arsenic	EPA 6020	< 0.4	mg/Kg	4887
Barium	EPA 6020	< 0.4	mg/Kg	4887
Beryllium	EPA 6020	< 0.4	mg/Kg	4887
Cadmium	EPA 6020	< 0.4	mg/Kg	4887
Chromium	EPA 6020	< 0.4	mg/Kg	4887
Cobalt	EPA 6020	< 0.4	mg/Kg	4887
Copper	EPA 6020	< 0.4	mg/Kg	4887
Lead	EPA 6020	< 0.4	mg/Kg	4887

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Quality Control Results

Order No.: Q6701

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
Molybdenum	EPA 6020	< 0.4	mg/Kg	4887
Nickel	EPA 6020	< 0.4	mg/Kg	4887
Selenium	EPA 6020	< 0.5	mg/Kg	4887
Silver	EPA 6020	< 0.4	mg/Kg	4887
Thallium	EPA 6020	< 0.4	mg/Kg	4887
Vanadium	EPA 6020	< 0.4	mg/Kg	4887
Zinc	EPA 6020	< 4	mg/Kg	4887

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Mercury	EPA 7471	105%	0.8	mg/Kg	56 - 148	4859
TPH as Diesel, SGT	EPA 8015/LUFT	60%	250	mg/Kg	50 - 150	4916
Benzene	EPA 8260	106%	50	ug/Kg	60 - 140	4927
Ethylbenzene	EPA 8260	114%	50	ug/Kg	60 - 140	4927
Toluene	EPA 8260	108%	50	ug/Kg	60 - 140	4927
m,p-Xylene	EPA 8260	114%	100	ug/Kg	60 - 140	4927
o-Xylene	EPA 8260	114%	50	ug/Kg	60 - 140	4927
Acenaphthene	EPA 8270 SIM	55%	67	ug/Kg	31 - 137	4881
Acenaphthylene	EPA 8270 SIM	36%	67	ug/Kg	26 - 119	4881
Anthracene	EPA 8270 SIM	57%	67	ug/Kg	44 - 110	4881
Benz[a]anthracene	EPA 8270 SIM	76%	67	ug/Kg	38 - 134	4881
Benzo[a]pyrene	EPA 8270 SIM	64%	67	ug/Kg	36 - 121	4881
Benzo[b]fluoranthene	EPA 8270 SIM	78%	67	ug/Kg	37 - 129	4881
Benzo[ghi]perylene	EPA 8270 SIM	79%	67	ug/Kg	31 - 128	4881
Benzo[k]fluoranthene	EPA 8270 SIM	76%	67	ug/Kg	36 - 135	4881
Chrysene	EPA 8270 SIM	76%	67	ug/Kg	38 - 128	4881
Dibenz[a,h]anthracene	EPA 8270 SIM	79%	67	ug/Kg	28 - 134	4881
Fluoranthene	EPA 8270 SIM	78%	67	ug/Kg	37 - 126	4881
Fluorene	EPA 8270 SIM	64%	67	ug/Kg	29 - 119	4881
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	81%	67	ug/Kg	25 - 125	4881
Naphthalene	EPA 8270 SIM	16%	67	ug/Kg	15 - 119	4881
Phenanthrene	EPA 8270 SIM	78%	67	ug/Kg	38 - 124	4881
Pyrene	EPA 8270 SIM	75%	67	ug/Kg	35 - 142	4881
Antimony	EPA 6020	114%	50	mg/Kg	10 - 120	4887
Arsenic	EPA 6020	92%	50	mg/Kg	50 - 130	4887
Barium	EPA 6020	98%	50	mg/Kg	60 - 140	4887
Beryllium	EPA 6020	97%	50	mg/Kg	60 - 140	4887
Cadmium	EPA 6020	104%	50	mg/Kg	60 - 140	4887
Chromium	EPA 6020	97%	50	mg/Kg	60 - 140	4887
Cobalt	EPA 6020	103%	50	mg/Kg	60 - 140	4887
Copper	EPA 6020	106%	50	mg/Kg	60 - 140	4887
Lead	EPA 6020	102%	50	mg/Kg	60 - 140	4887

CREEK ENVIRONMENTAL LABORATORIES, INC.
A Minority-owned Business Enterprise
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Quality Control Results

Order No.: Q6701

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Molybdenum	EPA 6020	97%	50	mg/Kg	60 - 140	4887
Nickel	EPA 6020	94%	50	mg/Kg	60 - 140	4887
Selenium	EPA 6020	96%	200	mg/Kg	60 - 140	4887
Silver	EPA 6020	92%	50	mg/Kg	50 - 130	4887
Thallium	EPA 6020	105%	50	mg/Kg	60 - 140	4887
Vanadium	EPA 6020	101%	50	mg/Kg	60 - 140	4887
Zinc	EPA 6020	100%	50	mg/Kg	60 - 140	4887

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Mercury	EPA 7471	104%	108%	5	09-C18369	0.8	mg/Kg	56 - 148	30	4859
Antimony	EPA 6020	47%	49%	5	09-C18498	50	mg/Kg	10 - 120	30	4887
Arsenic	EPA 6020	106%	105%	1	09-C18498	50	mg/Kg	50 - 130	30	4887
Barium	EPA 6020	92%	89%	2	09-C18498	50	mg/Kg	60 - 140	30	4887
Beryllium	EPA 6020	94%	90%	3	09-C18498	50	mg/Kg	60 - 140	30	4887
Cadmium	EPA 6020	114%	113%	1	09-C18498	50	mg/Kg	60 - 140	30	4887
Chromium	EPA 6020	89%	88%	2	09-C18498	50	mg/Kg	60 - 140	30	4887
Cobalt	EPA 6020	93%	91%	2	09-C18498	50	mg/Kg	60 - 140	30	4887
Copper	EPA 6020	108%	96%	10	09-C18498	50	mg/Kg	60 - 140	30	4887
Lead	EPA 6020	100%	98%	2	09-C18498	50	mg/Kg	60 - 140	30	4887
Molybdenum	EPA 6020	107%	107%	0	09-C18498	50	mg/Kg	60 - 140	30	4887
Nickel	EPA 6020	95%	93%	1	09-C18498	50	mg/Kg	60 - 140	30	4887
Selenium	EPA 6020	111%	110%	0	09-C18498	200	mg/Kg	60 - 140	30	4887
Silver	EPA 6020	101%	100%	1	09-C18498	50	mg/Kg	50 - 130	30	4887
Thallium	EPA 6020	102%	101%	1	09-C18498	50	mg/Kg	60 - 140	30	4887
Vanadium	EPA 6020	98%	96%	1	09-C18498	50	mg/Kg	60 - 140	30	4887
Zinc	EPA 6020	96%	92%	3	09-C18498	50	mg/Kg	60 - 140	30	4887

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
Benzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Bromobenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Bromochloromethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Bromodichloromethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Bromoform	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Bromomethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	50.	4927
t-Butylbenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
n-Butylbenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
sec-Butyl Benzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Carbon Tetrachloride	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927

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Quality Control Results

Order No.: Q6701

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
Chlorobenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Chloroethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	50.	4927
2-Chloroethylvinyl ether	EPA 8260	09-C18498	< 100	< 100	0	ug/Kg	50.	4927
Chloroform	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Chloromethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	50.	4927
2-Chlorotoluene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
4-Chlorotoluene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,2-Dibromo-3-Chloropropane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	40.	4927
Dibromochloromethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Dibromomethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,2-Dibromoethane (EDB)	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Dichlorodifluoromethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	50.	4927
1,2-Dichlorobenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,3-Dichlorobenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,4-Dichlorobenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,1-Dichloroethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,2-Dichloroethane (EDC)	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	40.	4927
1,1-Dichloroethene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
cis-1,2-Dichloroethene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
trans-1,2-Dichloethene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,2-Dichloropropane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,3-Dichloropropane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
2,2-Dichloropropane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,1-Dichloropropene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
cis-1,3-Dichloropropene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
trans-1,3-Dichloropropene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Ethylbenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Hexachlorobutadiene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	40.	4927
Isopropylbenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
4-Isopropyltoluene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Methylene Chloride	EPA 8260	09-C18498	< 20	< 20	0	ug/Kg	40.	4927
Methyl t-Butyl Ether (MTBE)	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	40.	4927
Naphthalene	EPA 8260	09-C18498	< 20	< 20	0	ug/Kg	40.	4927
n-Propylbenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Styrene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,1,1,2-Tetrachloroethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,1,2,2-Tetrachloroethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Tetrachloroethene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Toluene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,2,3-Trichlorobenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,2,4-Trichlorobenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,1,1-Trichloroethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,1,2-Trichloroethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Trichloroethene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927

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Quality Control Results

Order No.: Q6701

Sample Duplicate

Analyte	Method	Sample ID	Sample Value	Sample Duplicate	RPD	Units	RPD Limit	Batch
Trichlorofluoromethane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	50.	4927
1,2,3-Trichloropropane	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	40.	4927
1,2,4-Trimethylbenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
1,3,5-Trimethylbenzene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
Vinyl Chloride	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	50.	4927
m,p-Xylene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927
o-Xylene	EPA 8260	09-C18498	< 5	< 5	0	ug/Kg	30.	4927

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Surrogate Report

Sample Number	Batch	Method	Surrogate	% Recovery	QC Limits
09-C18495	4881	EPA 8270	Pyrene-d10 (Aromatic)	60.	16-127
09-C18495	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	69.	50-150
09-C18496	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	69.	50-150
09-C18497	4927	EPA 8260	Dibromofluoromethane	107.	80-130
09-C18497	4927	EPA 8260	Toluene-d8	123.	70-126
09-C18497	4927	EPA 8260	4-BFB	98.	57-124
09-C18497	4927	EPA 8260	1,2-Dichloroethane-d4	112.	60-143
09-C18497	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	86.	50-150
09-C18498	4927	EPA 8260	Dibromofluoromethane	101.	80-130
09-C18498	4927	EPA 8260	Toluene-d8	108.	70-126
09-C18498	4927	EPA 8260	4-BFB	97.	57-124
09-C18498	4927	EPA 8260	1,2-Dichloroethane-d4	96.	60-143
09-C18498	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	84.	50-150
09-C18499	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	69.	50-150
09-C18500	4881	EPA 8270	Pyrene-d10 (Aromatic)	56.	16-127
09-C18500	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	76.	50-150
09-C18501	4881	EPA 8270	Pyrene-d10 (Aromatic)	62.	16-127
blank	4927	EPA 8260	Dibromofluoromethane	110.	80-130
LCS	4927	EPA 8260	Dibromofluoromethane	102.	80-130
09-C18498 dup.	4927	EPA 8260	Dibromofluoromethane	106.	80-130
blank	4927	EPA 8260	Toluene-d8	119.	70-126
LCS	4927	EPA 8260	Toluene-d8	104.	70-126
09-C18498 dup.	4927	EPA 8260	Toluene-d8	120.	70-126
blank	4927	EPA 8260	4-BFB	92.	57-124
LCS	4927	EPA 8260	4-BFB	101.	57-124
09-C18498 dup.	4927	EPA 8260	4-BFB	94.	57-124
blank	4881	EPA 8270	Pyrene-d10 (Aromatic)	70.	16-127
LCS	4881	EPA 8270	Pyrene-d10 (Aromatic)	69.	16-127
blank	4927	EPA 8260	1,2-Dichloroethane-d4	87.	60-143
LCS	4927	EPA 8260	1,2-Dichloroethane-d4	104.	60-143
09-C18498 dup.	4927	EPA 8260	1,2-Dichloroethane-d4	90.	60-143
blank	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	75.	50-150
LCS	4916	EPA 8015M/LUFT DRO	Hexacosane (SL/SGT)	82.	50-150

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

Creek Environmental Labs, Inc.
141 Suburban Rd Suite C-5
San Luis Obispo, CA 93401-

Telephone: (805)545-9838
Attn: Orval Osborne

Page: 2

Project ID: Q6701

ASL Job Number	Submitted	Client
44145	12/17/2009	CREEK

Method: 8082, Polychlorinated Biphenyls(PCBs) by Gas Chromatography

QC Batch No: 121809-1

Our Lab I.D.		246410	246411	246412	246413	246414
Client Sample I.D.		(18495) SB-8-0.5	(18496) SB-8-1.0	(18497) SB-7-1.0	(18498) SB-7-2.0	(18500) SB-11-1.0
Date Sampled		12/15/2009	12/15/2009	12/15/2009	12/15/2009	12/15/2009
Date Prepared		12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009
Preparation Method						
Date Analyzed		12/18/2009	12/18/2009	12/18/2009	12/18/2009	12/18/2009
Matrix		Soil	Soil	Soil	Soil	Soil
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor		1	1	1	1	1
Analytes	PQL	Results	Results	Results	Results	Results
Aroclor-1016 (PCB-1016)	33.0	ND	ND	ND	ND	ND
Aroclor-1221 (PCB-1221)	67.0	ND	ND	ND	ND	ND
Aroclor-1232 (PCB-1232)	33.0	ND	ND	ND	ND	ND
Aroclor-1242 (PCB-1242)	33.0	ND	ND	ND	ND	ND
Aroclor-1248 (PCB-1248)	33.0	ND	ND	ND	ND	ND
Aroclor-1254 (PCB-1254)	33.0	ND	ND	ND	ND	ND
Aroclor-1260 (PCB-1260)	33.0	ND	ND	ND	ND	ND

Our Lab I.D.		246410	246411	246412	246413	246414
Surrogates	% Rec Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Surrogate Percent Recovery						
Decachlorobiphenyl	43-169	94	101	108	86	97

QUALITY CONTROL REPORT

QC Batch No: 121809-1

Analytes	MS % REC	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit	LCS % REC	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit
Aroclor-1260 (PCB-1260)	89	99	10.6	39-150	<30	89	92	3.3	39-150	<30

AMERICAN SCIENTIFIC LABORATORIES, LLC
Environmental Testing Services
2520 N. San Fernando Rd., Los Angeles, CA 90065 Tel: (323) 223-9700 Fax: (323) 223-9500

ANALYTICAL RESULTS

Ordered By

Creek Environmental Labs, Inc.
141 Suburban Rd Suite C-5
San Luis Obispo, CA 93401-

Telephone: (805)545-9838
Attn: Orval Osborne

Page: 3

Project ID: Q6701

ASL Job Number	Submitted	Client
44145	12/17/2009	CREEK

Method: SM2540-G, Percent Solids

QC Batch No: 121709-1

Our Lab I.D.		246410	246411	246412	246413	246414
Client Sample I.D.		(18495) SB-8-0.5	(18496) SB-8-1.0	(18497) SB-7-1.0	(18498) SB-7-2.0	(18500) SB-11-1.0
Date Sampled		12/15/2009	12/15/2009	12/15/2009	12/15/2009	12/15/2009
Date Prepared		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Preparation Method						
Date Analyzed		12/17/2009	12/17/2009	12/17/2009	12/17/2009	12/17/2009
Matrix		Soil	Soil	Soil	Soil	Soil
Units		percent(%)	percent(%)	percent(%)	percent(%)	percent(%)
Dilution Factor		1	1	1	1	1
Analytes	PQL	Results	Results	Results	Results	Results
Conventionals						
% Solids	1.00	93.9	90.0	91.2	88.4	86.4

QUALITY CONTROL REPORT

QC Batch No: 121709-1

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit						
Conventionals										
% Solids	93.9	93.6	<1	20						

Creek Environmental Laboratories, Inc. Chain-of-Custody

141 Suburban Road, Suite C-5, San Luis Obispo, CA 93401 phone (805) 545-9838 fax (805) 545-0107 www.creeklabs.com sales@creeklabs.com

Order # Q6808

- Please Print in Pen

☐ DW EDT ☐ LUFT EDF ☐ Custom EDD

Client Name AMEC / GEOMATRIX	**Contact** JONATHAN SKAGGS	**Phone** 510-663-4104	**Due Date:** 12-29-9 FIRM 24Hr 48Hr Other Normal TAT
Address **City** **State** **Zip**		Fax	Cell Beeper
Project Name/Number MARSH LANDING		PO# 15317.000	Copies To:
Bill to: (if different from above) AMEC - SKAGGS	Address	City	State Zip
Sampler Name (Print) TIFFANY KLITZKE	Comments:		**Matrix Key:** DW = Drinking Water AQ = Aqueous SL = Soil/Solid

Sample Description	Date/Time Sampled	Analysis	Matrix	# of Bottles	Preservative / Type Bottles	Creek Lab Sample #
SB-1-GW (18493)	12-15-09 1705	Be, Cd, Co, Cu, Pb, Se, Ag, Tl by 200.8	Aq	1	250 P HNO_3	18811
SB-7-GW (18494)	12-15-09 1755	"	"	1	"	18812
SB-3-GW (18478)	12-15-09 1420	"	"	1	"	18813
SB-2-GW (18479)	12-15-09 1445	"	"	1	"	18814
SB-20-GW (18480)	12-15-09 1500	"	"	1	"	18815

RELINQUISHED BY (Sign)	(Print)	(Organization)	DATE/TIME	RECEIVED BY (Sign)	(Print)	(Organization)
			12-23-9 1000	[signature]	J. WENSLOFF	Creek Environmental Laboratories, Inc.

FOR LAB USE ONLY: Shipping Method: Client/ Lab/ Courier: IN HOUSE — Sample Conditions: Temp:____ Intact: Y/ N Custody Sealed: Y/ N

REMARKS Per e-mail from Jonathan 12/22/9 (attached)

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Date: December 29, 2009

CASE NARRATIVE Q6808

Client: **Amec Geomatrix**
Project: **PG&E Marsh Landing**
Sample(s): **09-C18811 to 09-C18815**
Sampled: **12/15/09** **Received: 12/16/09**

Samples 09-C18811 to 09-C18815 were received at the laboratory at 3.8 °C with no anomaly except for the following remarks:

- Metals analysis was requested as additional analysis per an e-mail received from Jonathan Skaggs on 12-22-09.

The samples were digested and analyzed following method EPA 200.8 (ICP-MS), except for the mercury which was analyzed by method EPA 7471A (CVAAS).

All samples were extracted and analyzed within holding time. All analytical quality control parameters were within acceptable limits. There was no analytical anomaly except for the above comments and the following remarks:

- Beryllium was reported with a Detection Limit for Reporting (DLR) of 0.0005 mg/L. This is below our Limit of Quantitation (LOQ) of 0.001 mg/L, but above the Limit of Detection (LOD) which is 0.0001 mg/L.
- Cadmium was reported with a DLR of 0.0002 mg/L. This is below the LOQ of 0.001 mg/L, and right at the LOD of 0.0002 mg/L.
- Silver was reported with a DLR of 0.0001 mg/L. This is below the LOQ of 0.001 mg/L, and right at the LOD which is 0.0001 mg/L.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18813
Order: Q6808
Project: Marsh Landing
Received: 12/23/09
Printed: 12/29/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-3-GW (18478)	Tiffany Klitzke	12/15/09@14:20	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batc
Mercury	Not Detected	0.0002	1	mg/L	EPA 7470	12/18/09		509
Beryllium	Not Detected	0.0005 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cadmium	Not Detected	0.0002 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cobalt	0.003	0.002	2	mg/L	EPA 200.8	12/28/09	12/28/09	504
Copper	0.006	0.002	2	mg/L	EPA 200.8	12/28/09	12/28/09	504
Lead	0.002	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Selenium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Silver	Not Detected	0.0001 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Thallium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18814
Order: Q6808
Project: Marsh Landing
Received: 12/23/09
Printed: 12/29/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-2-GW (18479)	Tiffany Klitzke	12/15/09@14:45	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected	0.0002	1	mg/L	EPA 7470	12/18/09		509
Beryllium	Not Detected	0.0005 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cadmium	Not Detected	0.0002 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cobalt	0.001	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Copper	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Lead	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Selenium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Silver	Not Detected	0.0001 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Thallium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

CREEK ENVIRONMENTAL LABORATORIES, INC.

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18811
Order: Q6808
Project: Marsh Landing
Received: 12/23/09
Printed: 12/29/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-1-GW (18493)	Tiffany Klitzke	12/15/09@17:05	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batc
Mercury	Not Detected	0.0002	1	mg/L	EPA 7470	12/18/09		509
Beryllium	Not Detected	0.0005 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cadmium	Not Detected	0.0002 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cobalt	Not Detected	0.002	2	mg/L	EPA 200.8	12/28/09	12/28/09	504
Copper	0.005	0.002	2	mg/L	EPA 200.8	12/28/09	12/28/09	504
Lead	0.003	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Selenium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Silver	Not Detected	0.0001 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Thallium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18812
Order: Q6808
Project: Marsh Landing
Received: 12/23/09
Printed: 12/29/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-7-GW (18494)	Tiffany Klitzke	12/15/09@17:55	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batcl
Mercury	Not Detected	0.0002	1	mg/L	EPA 7470	12/18/09		509:
Beryllium	Not Detected	0.0005 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504'
Cadmium	Not Detected	0.0002 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504'
Cobalt	Not Detected	0.002	2	mg/L	EPA 200.8	12/28/09	12/28/09	504'
Copper	0.002	0.002	2	mg/L	EPA 200.8	12/28/09	12/28/09	504'
Lead	0.001	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504'
Selenium	0.003	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504'
Silver	Not Detected	0.0001 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504'
Thallium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504'

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18815
Order: Q6808
Project: Marsh Landing
Received: 12/23/09
Printed: 12/29/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-20-GW (18480)	Tiffany Klitzke	12/15/09@15:00	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batc
Mercury	Not Detected	0.0002	1	mg/L	EPA 7470	12/18/09		509
Beryllium	Not Detected	0.0005 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cadmium	Not Detected	0.0002 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Cobalt	0.001	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Copper	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Lead	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Selenium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Silver	Not Detected	0.0001 <0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504
Thallium	Not Detected	0.001	1	mg/L	EPA 200.8	12/28/09	12/28/09	504

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Quality Control Results

Order No.: Q6808

Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
Mercury	EPA 7470	< 0.0002	mg/L	5092
Beryllium	EPA 200.8	< 0.0005	mg/L	5041
Cadmium	EPA 200.8	< 0.0002	mg/L	5041
Cobalt	EPA 200.8	< 0.001	mg/L	5041
Copper	EPA 200.8	< 0.001	mg/L	5041
Lead	EPA 200.8	< 0.001	mg/L	5041
Selenium	EPA 200.8	< 0.001	mg/L	5041
Silver	EPA 200.8	< 0.0001	mg/L	5041
Thallium	EPA 200.8	< 0.001	mg/L	5041

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Mercury	EPA 7470	104%	0.0050	mg/L	70 - 130	5092
Beryllium	EPA 200.8	97%	0.1	mg/L	85 - 115	5041
Cadmium	EPA 200.8	102%	0.1	mg/L	85 - 115	5041
Cobalt	EPA 200.8	96%	0.1	mg/L	85 - 115	5041
Copper	EPA 200.8	98%	0.1	mg/L	85 - 115	5041
Lead	EPA 200.8	100%	0.1	mg/L	85 - 115	5041
Selenium	EPA 200.8	104%	0.5	mg/L	85 - 115	5041
Silver	EPA 200.8	101%	0.1	mg/L	85 - 115	5041
Thallium	EPA 200.8	94%	0.1	mg/L	85 - 115	5041

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Mercury	EPA 7470	100%	98%	2	09-C18815	0.0050	mg/L	70 - 130	20	5092
Beryllium	EPA 200.8	95%	93%	3	09-C18812	0.1	mg/L	70 - 130	20	5041
Cadmium	EPA 200.8	102%	102%	0	09-C18812	0.1	mg/L	70 - 130	20	5041
Cobalt	EPA 200.8	87%	87%	0	09-C18812	0.1	mg/L	70 - 130	20	5041
Copper	EPA 200.8	86%	87%	1	09-C18812	0.1	mg/L	70 - 130	20	5041
Lead	EPA 200.8	101%	102%	2	09-C18812	0.1	mg/L	70 - 130	20	5041
Selenium	EPA 200.8	103%	102%	0	09-C18812	0.5	mg/L	70 - 130	20	5041
Silver	EPA 200.8	99%	100%	1	09-C18812	0.1	mg/L	70 - 130	20	5041
Thallium	EPA 200.8	96%	98%	2	09-C18812	0.1	mg/L	70 - 130	20	5041

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Date: December 30, 2009

CASE NARRATIVE Q6880

Client: **Amec Geomatrix**
Project: **PG&E Marsh Landing**
Sample(s): **09-C18976**
Sampled: **12/14/09** **Received:** **12/15/09**

Samples 09-C18976 was received at the laboratory at 3.8 °C with no anomaly except for the following remarks:

- Metals analysis was requested as additional analysis per an e-mail received from Jonathan Skaggs on 12-29-09.

The sample was digested and analyzed following method EPA 200.8 (ICP-MS), except for the mercury which was analyzed by method EPA 7471A (CVAAS).

The sample was extracted and analyzed within holding time. All analytical quality control parameters were within acceptable limits. There was no analytical anomaly except for the above comments and the following remarks:

- Beryllium was reported with a Detection Limit for Reporting (DLR) of 0.0005 mg/L. This is below our Limit of Quantitation (LOQ) of 0.001 mg/L, but above the Limit of Detection (LOD) which is 0.0001 mg/L.
- Cadmium was reported with a DLR of 0.0002 mg/L. This is below the LOQ of 0.001 mg/L, and right at the LOD of 0.0002 mg/L.
- Silver was reported with a DLR of 0.0001 mg/L. This is below the LOQ of 0.001 mg/L, and right at the LOD which is 0.0001 mg/L.
- Silver was found in the Reagent Blank at 0.0001 mg/L. Silver was found in the sample at 0.0001 mg/L as well. The silver results received a B flag.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Jonathan Skaggs
AMEC Geomatrix
2101 Webster St.
Oakland, CA 94612

Log Number: 09-C18976
Order: Q6880
Project: Marsh Landing (Q6665)
Received: 12/30/09
Printed: 12/30/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
SB-4-GW (18362)	Tiffany Klitzke	12/14/09@11:35	Aqueous

Analyte	Result	Flag	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
Mercury	Not Detected		0.0002	1	mg/L	EPA 7470	12/18/09		5145
Beryllium	Not Detected		0.0005 <0.001	1	mg/L	EPA 200.8	12/30/09	12/29/09	5147
Cadmium	Not Detected		0.0002 <0.001	1	mg/L	EPA 200.8	12/30/09	12/29/09	5147
Cobalt	Not Detected		0.002	2	mg/L	EPA 200.8	12/30/09	12/29/09	5147
Copper	0.002		0.002	2	mg/L	EPA 200.8	12/30/09	12/29/09	5147
Lead	Not Detected		0.001	1	mg/L	EPA 200.8	12/30/09	12/29/09	5147
Selenium	Not Detected		0.001	1	mg/L	EPA 200.8	12/30/09	12/29/09	5147
Silver	0.0001	B	0.0001	1 u	mg/L	EPA 200.8	12/30/09	12/29/09	5147
Thallium	Not Detected		0.001	1	mg/L	EPA 200.8	12/30/09	12/29/09	5147

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

<0.001u

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Quality Control Results

Order No.: Q6880

Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
Mercury	EPA 7470	< 0.0002	mg/L	5145
Beryllium	EPA 200.8	< 0.0005	mg/L	5147
Cadmium	EPA 200.8	< 0.0002	mg/L	5147
Cobalt	EPA 200.8	< 0.002	mg/L	5147
Copper	EPA 200.8	< 0.002	mg/L	5147
Lead	EPA 200.8	< 0.001	mg/L	5147
Selenium	EPA 200.8	< 0.001	mg/L	5147
Silver	EPA 200.8	0.0001	mg/L	5147
Thallium	EPA 200.8	< 0.001	mg/L	5147

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
Mercury	EPA 7470	104%	0.0050	mg/L	70 - 130	5145
Beryllium	EPA 200.8	90%	0.1	mg/L	85 - 115	5147
Cadmium	EPA 200.8	101%	0.1	mg/L	85 - 115	5147
Cobalt	EPA 200.8	95%	0.1	mg/L	85 - 115	5147
Copper	EPA 200.8	98%	0.1	mg/L	85 - 115	5147
Lead	EPA 200.8	104%	0.1	mg/L	85 - 115	5147
Selenium	EPA 200.8	100%	0.5	mg/L	85 - 115	5147
Silver	EPA 200.8	100%	0.1	mg/L	85 - 115	5147
Thallium	EPA 200.8	95%	0.1	mg/L	85 - 115	5147

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS Rec.	MSD Rec.	RPD	Matrix Sample	Spike Amount	Units	Recovery Limits	RPD Limit	Batch
Beryllium	EPA 200.8	89%	87%	2	09-C18800	0.1	mg/L	70 - 130	20	5147
Cadmium	EPA 200.8	101%	98%	3	09-C18800	0.1	mg/L	70 - 130	20	5147
Cobalt	EPA 200.8	86%	85%	1	09-C18800	0.1	mg/L	70 - 130	20	5147
Copper	EPA 200.8	86%	84%	2	09-C18800	0.1	mg/L	70 - 130	20	5147
Lead	EPA 200.8	103%	101%	2	09-C18800	0.1	mg/L	70 - 130	20	5147
Selenium	EPA 200.8	102%	99%	3	09-C18800	0.5	mg/L	70 - 130	20	5147
Silver	EPA 200.8	99%	96%	3	09-C18800	0.1	mg/L	70 - 130	20	5147
Thallium	EPA 200.8	95%	94%	2	09-C18800	0.1	mg/L	70 - 130	20	5147

Creek Environmental Laboratories, Inc. — Chain-of-Custody

141 Suburban Road, Suite C-5, San Luis Obispo, CA 93401 phone (805) 545-9838 fax (805) 545-0107 www.creeklabs.com sales@creeklabs.com

Order # Q6880

• Please Print in Pen

☐ DW EDT ☐ LUFT EDF ☐ Custom EDD

Client Name AMEC	Contact JONATHAN SKAGGS	Phone 510-663-4104	Due Date: 24Hr 48Hr Other Normal TAT
Address City State Zip (Q6665)		Fax	Cell Beeper
Project Name/Number MARSH LANDING (Q6698) ~~Q6666~~		PO# 15317.000.	Copies To:
Bill to: (if different from above) Address City State Zip			
Sampler Name (Print) Tiffany Klitzke	Comments: Per e-mail from J. Skaggs		Matrix Key: DW = Drinking Water AQ = Aqueous SL = Soil/Solid

Sample Description	Date/Time Sampled	Analysis	Matrix	# of Bottles	Preservative / Type Bottles	Creek Lab Sample #
SB-4-GW ~~(18481)~~ (18362)	12-14-09 11:35	Hg, Be, Cd, Co, Cu, Pb Se, Ag, Tl	Aq	1	250 P HNO3	18976
		LL				

RELINQUISHED BY (Sign)	(Print)	(Organization)	DATE/TIME	RECEIVED BY (Sign)	(Print)	(Organization)
			12-30-09 1400	[signature]	J. WENSLOFF	Creek Environmental Laboratories, Inc.

FOR LAB USE ONLY: Shipping Method: Client/ Lab/ Courier: In House Sample Conditions: **Temp:**____ Intact: Y/ N Custody Sealed: Y/ N

REMARKS ____________________

APPENDIX C

Creek Environmental Laboratories Reporting Limits

EPA 8260	SOIL		WATER	
	MDL	PQL	MDL	PQL
ANALYTE	ug/Kg	ug/Kg	ug/L	ug/L
Benzene	2.0	5	0.2	0.5
Bromobenzene	0.9	5	0.2	0.5
Bromochloromethane	2.0	5	0.2	0.5
Bromodichloromethane	1.3	5	0.2	0.5
Bromoform	1.8	5	0.3	0.5
Bromomethane	2.7	5	0.3	0.5
n-Butylbenzene	2.4	5	0.2	0.5
sec-Butyl Benzene	2.7	5	0.2	0.5
t-Butylbenzene	1.0	5	0.2	0.5
Carbon Tetrachloride	4.4	5	0.2	0.5
Chlorobenzene	1.6	5	0.2	0.5
Chloroethane	1.8	5	0.3	0.5
2-Chloroethylvinyl ether	4.7	100	10.0	20
Chloroform	2.9	5	0.2	0.5
Chloromethane	2.9	5	0.3	0.5
2-Chlorotoluene	1.3	5	0.2	0.5
4-Chlorotoluene	2.9	5	0.2	0.5
1,2-Dibromo-3-Chloropropane	1.6	5	1.0	1
Dibromochloromethane	2.1	5	0.3	0.5
Dibromomethane	1.0	5	0.3	0.5
1,2-Dibromoethane (EDB)	0.8	5	0.4	0.5
Dichlorodifluoromethane	3.0	5	0.5	0.5
1,2-Dichlorobenzene	2.0	5	0.2	0.5
1,3-Dichlorobenzene	2.4	5	0.2	0.5
1,4-Dichlorobenzene	0.8	5	0.2	0.5
1,1-Dichloroethane	2.3	5	0.2	0.5
1,2-Dichloroethane (EDC)	3.8	5	0.2	0.5
1,1-Dichloroethene	0.9	5	0.2	0.5
cis-1,2-Dichloroethene	0.9	5	0.2	0.5
trans-1,2-Dichloethene	1.1	5	0.2	0.5
1,2-Dichloropropane	0.7	5	0.2	0.5
1,3-Dichloropropane	1.4	5	0.2	0.5
2,2-Dichloropropane	1.8	5	0.2	0.5
1,1-Dichloropropene	2.1	5	0.2	0.5

EPA 8260	SOIL		WATER	
	MDL	DLR	MDL	DLR
ANALYTE	ug/Kg	ug/Kg	ug/L	ug/L
cis-1,3-Dichloropropene	1.1	5	0.2	0.5
trans-1,3-Dichloropropene	0.7	5	0.2	0.5
Ethylbenzene	1.3	5	0.2	0.5
Hexachlorobutadiene	1.1	5	0.3	0.5
Iodomethane	10.0	20	2.0	5
Isopropylbenzene	0.7	5	0.2	0.5
4-Isopropyltoluene	2.4	5	0.2	0.5
Methylene Chloride	1.4	20	2.0	5
Methyl t-Butyl Ether (MTBE)	3.0	5	0.2	0.5

Naphthalene	2.2	20	2.0	5
n-Propylbenzene	2.6	5	0.2	0.5
Styrene	0.7	5	0.2	0.5
1,1,1,2-Tetrachloroethane	2.7	5	0.2	0.5
1,1,2,2-Tetrachloroethane	2.6	5	0.2	0.5
Tetrachloroethene	2.4	5	0.2	0.5
Toluene	2.0	5	0.2	0.5
1,2,3-Trichlorobenzene	1.5	5	0.3	0.5
1,2,4-Trichlorobenzene	0.8	5	0.3	0.5
1,1,1-Trichloroethane	3.0	5	0.2	0.5
1,1,2-Trichloroethane	0.8	5	0.2	0.5
Trichloroethene	1.6	5	0.2	0.5
Trichlorofluoromethane	3.1	5	0.3	0.5
1,2,3-Trichloropropane	1.1	5	0.3	0.5
1,2,4-Trimethylbenzene	1.4	5	0.2	0.5
1,3,5-Trimethylbenzene	2.0	5	0.2	0.5
Vinyl Chloride	2.9	5	0.3	0.5
m,p-Xylene	4.0	5	0.4	0.5
o-Xylene	2.0	5	0.2	0.5
t-Butyl Alcohol (TBA)	10.0	20	1.0	2
TAME	3.0	5	0.4	0.5
DIPE	2.8	5	0.2	0.5
ETBE	3.3	5	0.2	0.5
Acetone	8.0	20	5.0	10
2-Butanone (MEK)	9.0	20	5.0	10
4-Methyl-2-pentanone (MIBK)	4.0	10	2.0	5
2-Hexanone	10.0	20	2.0	5

TPH ANALYTE	MDL mg/Kg	PQL mg/Kg	MDL ug/L	PQL ug/L
TPH-Gasoline 8015	0.2	0.5	20	50
TPH-Diesel 8015	5	10	50	100
TPH-Motor Oil 8015	5	10	50	100

TPH Fractionation:				
Aliphatic Hydrocarbons (C5-C8)		0.5		
Aromatic Hydrocarbons (C6-C8)		0.005		
Aliphatic Hydrocarbons (C9-C18)		10		
Aromatic Hydrocarbons (C9-C16)		10		
Aliphatic Hydrocarbons (C19-C32)		20		
Aromatic Hydrocarbons (C17-C32)		10		

ICP/MS METALS	EPA 6020 SOIL PQL	EPA 6020 WATER PQL	EPA 200.8 WATER PQL
ANALYTE	mg/Kg	mg/L	mg/L
Antimony	0.4	0.008	
Arsenic	0.4	0.008	
Barium	0.4	0.008	
Beryllium	0.4	0.008	0.001
Cadmium	0.4	0.008	0.001
Chromium	0.4	0.008	
Cobalt	0.4	0.008	0.001
Copper	0.4	0.008	0.001
Lead	0.4	0.008	0.001
Molybdenum	0.4	0.008	
Nickel	0.4	0.008	
Selenium	0.5	0.008	0.001
Silver	0.4	0.008	0.001
Thallium	0.4	0.008	0.001
Vanadium	0.4	0.008	
Zinc	4	0.08	

Cold Vapor	EPA 7471 SOIL	EPA 7470 WATER
	mg/Kg	mg/L
Mercury	0.04	0.0002

May 11, 2010

Project 15317.000/4

Mr. Tony Natera
Hazardous Substances Engineer
Northern California Coastal Cleanup Operations Branch
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, California 94710

Subject: **Amendment to May 6, 2010 Revised Investigation and Risk Assessment Work Plan and April 7, 2010 Addendum to Facility Investigation and Risk Assessment Work Plan**
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Dear Mr. Natera:

On behalf of the Pacific Gas and Electric Company (PG&E), AMEC Geomatrix, Inc. (AMEC), has prepared this Amendment to the May 6, 2010, *Revised Investigation and Risk Assessment Work Plan* and the April 7, 2010, *Addendum to Facility Investigation and Risk Assessment Work Plan* (collectively referred to as the work plan) for the Marsh Landing Generating Station (project area; MLGS) which is located within the Contra Costa Power Plant (CCPP) at 3201 Wilbur Avenue, Contra Costa County, California.

Based on recent discussions with staff from the California Department of Toxic Substances Control (DTSC), a quantitative risk evaluation of total petroleum hydrocarbons (TPH) in soil and groundwater based on specific carbon ranges and fractionated data[1] is currently not required at the project area. Several sampling locations were previously proposed in the work plan to specifically obtain additional petroleum hydrocarbon data for use in the health risk assessment, as discussed in Section 4.2 of the work plan. Because these data are not required to assess health risks, samples proposed to further address TPH in soil and groundwater will not be collected nor analyzed.

[1] California Department of Toxic Substances Control, Human and Ecological Risk Division, *Interim Guidance Evaluating Human Health Risks from Total Petroleum Hydrocarbons (TPH)*, June 16, 2009.

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AMEC Geomatrix

As a result, a revised sampling and analysis plan (Table 9) and figure showing proposed sampling locations (Figure 18) are attached.

Please contact either of the undersigned if you have any questions.

Sincerely yours,
AMEC Geomatrix, Inc.

REGISTERED PROFESSIONAL ENGINEER
JENNIFER L. PATTERSON
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Exp. 6/11
CIVIL
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Enclosures: Table 9 - Sampling and Analysis Plan - Revised
Figure 18 - Proposed Sampling Locations

cc: Neil Ziemba, PG&E
Ken Simas, WAU & Company

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
Tank Farm Area										
SB-17	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-18	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-20	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-21	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-23	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-24	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-26	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-27	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-30	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-32	Assess the presence of lead and PCBs adjacent to the ASTs	Soil	0.5				X	X		
			1.5				X	X		
SB-33 [3]	Assess groundwater conditions at upgradient boundary	GW	Water Table [4]	X	X	X			X	
SB-34	Assess groundwater conditions at upgradient boundary	GW	Water Table [4]	X	X	X			X	

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-35	Assess the presence of PAHs	Soil	1.0							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-36	Assess the presence of PAHs	Soil	1.0							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-60	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-61	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-62	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-63	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-64	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-65	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-66	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-67	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-68	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-69	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-70	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)
SB-71	Characterize soil benath ASTs	Soil	1.0	**X**	**X**					**X**
			3.0	**X**	**X**					**X**
			5.0	(X)	(X)					(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-72	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)
SB-73	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)
SB-74	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)
SB-75	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)
SB-76	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)
SB-77	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)
SB-78	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)
SB-79	Characterize soil benath ASTs	Soil	1.0	X	X					X
			3.0	X	X					X
			5.0	(X)	(X)					(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
Construction Yard Area										
SB-43	Delineate PAHs in southeast area	Soil	0.5							**X**
			1.5							**X**
			3,0							**X**
			4.5							**X**
			6.0							(X)
			8.0							(X)
			10.0							(X)
	Assess groundwater conditions at upgradient boundary	GW	Water Table [4]	**X**	**X**	**X**			**X**	
SB-44	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-45	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-46	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-47	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-48	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-49	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-50	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-51	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-52	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-53	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-54	Delineate PAHs in southeast area	Soil	0.5							**X**
			3.0							**X**
			4.5							**X**
			6.0							**X**
			8.0							(X)
			10.0							(X)
SB-55	Delineate PAHs in southeast area	Soil	0.5							(X)
			3.0							(X)
			4.5							(X)
			6.0							(X)
			8.0							(X)
			10.0							(X)
SB-56	Delineate PAHs in southeast area	Soil	0.5							(X)
			3.0							(X)
			4.5							(X)
			6.0							(X)
			8.0							(X)
			10.0							(X)
SB-57	Delineate PAHs in southeast area	Soil	0.5							(X)
			3.0							(X)
			4.5							(X)
			6.0							(X)
			8.0							(X)
			10.0							(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Sampling Location [2]	Objective	Media	Sample Depths to be Analyzed (ft bgs)	TPHd with Silica Gel Cleanup	TPHmo with Silica Gel Cleanup	VOCs	Lead	PCBs	Title 22 Metals	PAHs
SB-58	Delineate PAHs in southeast area	Soil	0.5							(X)
			3.0							(X)
			4.5							(X)
			6.0							(X)
			8.0							(X)
			10.0							(X)
SB-59	Delineate PAHs in southeast area	Soil	0.5							(X)
			3.0							(X)
			4.5							(X)
			6.0							(X)
			8.0							(X)
			10.0							(X)

TABLE 9

SAMPLING AND ANALYSIS PLAN - REVISED [1]

Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

Analysis

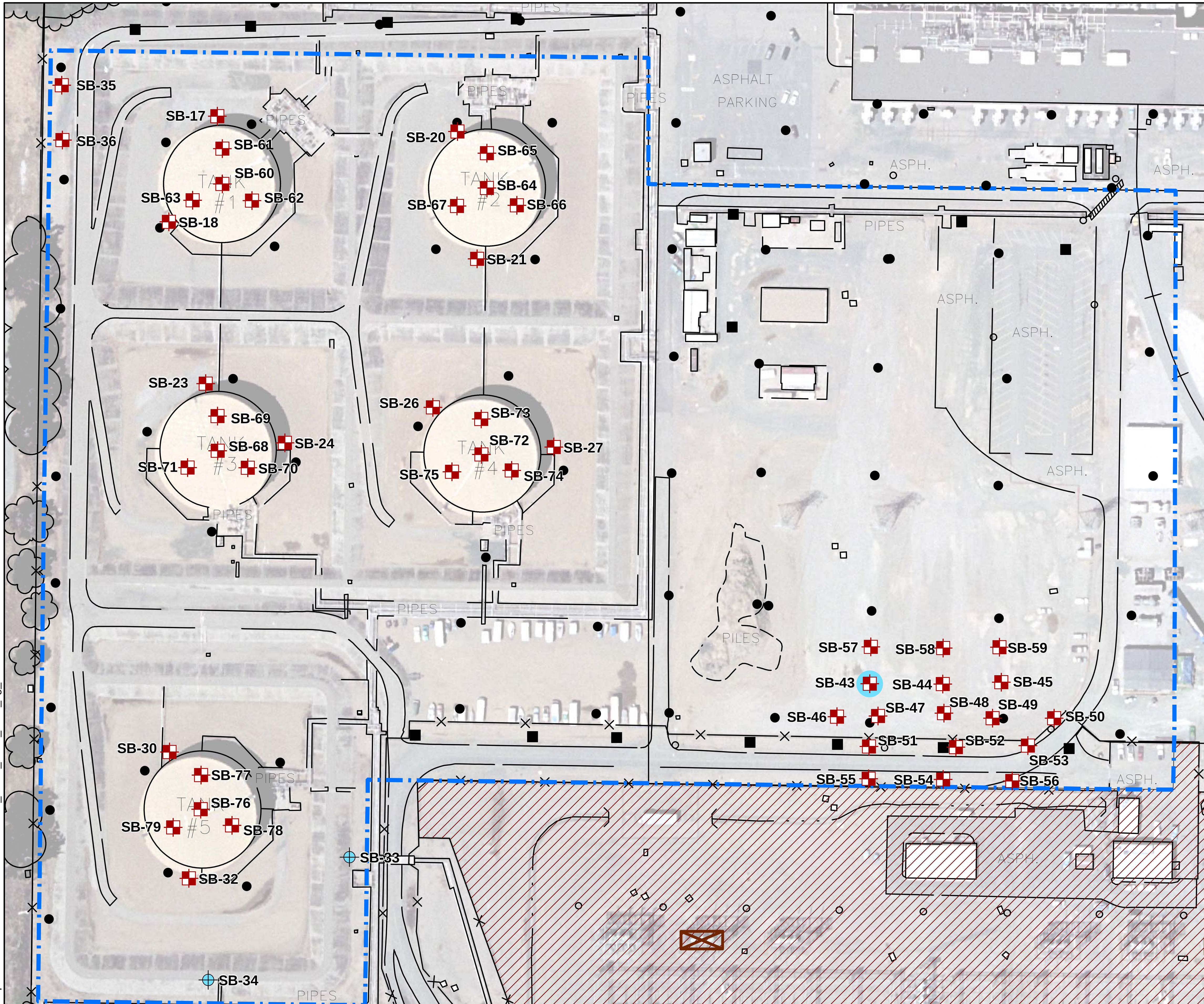
Samples to be analyzed for: TPHd and TPHmo using EPA Method 8015M with silica gel preparation; VOCs using EPA Method 8260B; lead using EPA Method 6010B; PCBs using EPA Method 8082; Title 22 metals using EPA Methods 200.8/7470; and PAHs using EPA Method 8270C with selective ion monitoring.

Notes

1. Table 9 is revised to include additional sampling in the Tank Farm area (i.e., sampling locations SB-60 through SB-79) and to remove sampling and analysis for TPH fractionation.
2. Sample locations are shown on Figure 18.
3. A blind duplicate groundwater sample will be collected at the SB-33 location.
4. Sampling interval will be from water table (anticipated to be at approximately 10 to 15 feet bgs) to 5 feet below.

Abbreviations

( ) = indicates that sample will be held and analyzed based on results of shallower or nearby samples.
DTSC = Department of Toxic Substances Control
EPA = U. S. Environmental Protection Agency
ft bgs = feet below ground surface
PAHs = polynuclear aromatic hydrocarbons
PCBs = polychlorinated biphenyls
TPHd = total petroleum hydrocarbons quantified as diesel
TPHmo = total petroleum hydrocarbons quantified as motor oil
VOCs = volatile organic compounds



Explanation

- Proposed grab groundwater sampling location
- Proposed soil and grab groundwater sampling location
- Proposed soil sampling location
- 2009 sampling location
- 1997 sampling location
- Marsh Landing Generating Station project boundary
- PG&E switchyard
- Reported oil-filled circuit breaker explosion site

N

0 120 240 Feet

Aerial image from USGS digital orthophoto dated May 23, 2002.

PROPOSED SAMPLING LOCATIONS
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: JMS	Date: 5/6/2010	Project No. 15317.000
AMEC Geomatrix		Figure 18

File path: S:\15300\15317\15317.000\task_04\10_0506_dtsc_fig_18.mxd

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
3201 Wilbur Avenue
Contra Costa County, California

Submitted to:

California Department of Toxic Substances Control
Berkeley, CA

Submitted by:

AMEC Geomatrix, Inc., Oakland, CA

March 2010

Project No. 15317.001

AMEC Geomatrix

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FIGURES

ATTACHMENTS

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
3201 Wilbur Avenue
Antioch, California

1.0 ADMINISTRATIVE INFORMATION

Project Name:	Marsh Landing Generating Station
Project Start Date:	March 2010
Project Number:	15317.000
Project Address:	3201 Wilbur Avenue, Contra Costa County, CA
Project Manager:	Jennifer Patterson (AMEC Geomatrix)
Telephone No.:	(510) 663-4167 office / (510) 821-8925 cell
Project Health and Safety Officer:	Donald Kubik, Jr., CIH (AMEC Geomatrix)
Telephone No.:	(510) 663-4115 office / (510) 368-6433 cell
Site Health and Safety Officer:	Jonathan Skaggs (AMEC Geomatrix)
Site Supervisor:	Tiffany Klitzke (AMEC Geomatrix)
Telephone No.:	(510) 663-4144 office / (831) 227-5144 cell
Contra Costa Power Plant (CCCP) Contact:	Andrea Ricci (Mirant Corporation)
Telephone No.:	(925) 427-3554 office / (925) 324-3554 cell

In Case of Emergency Call CCPP Control Room (Emergency Contact):

Telephone No.: (925) 779-6575

Pacific Gas and Electric Company Contact:	Ken Simas (WAU & Company)
Telephone No.:	(925) 997-6093 office / (415) 392-3869 cell

STOP WORK AUTHORITY

Anyone and everyone working on the project have the responsibility and authority to stop any work for unsafe conditions, for unsafe behavior, or for any other safety issue. There will be no repercussions to the employee for stopping any unsafe behavior.

2.0 PURPOSE

This Site-Specific Health and Safety Plan (HASP) outlines the health and safety procedures that shall be followed during environmental investigation activities at the Marsh Landing Generating Station at 3201 Wilbur Avenue in Contra Costa County, California (the site). The observance and practice of the procedures in this plan are mandatory for all AMEC Geomatrix, Inc. (AMEC) employees at the site. All contractors and site visitors shall be made aware of the requirements of this plan; however, contractors are responsible for the health and safety of their own employees and for following all applicable federal, state, and local regulations. All contractors shall develop their own HASPs as necessary to be in compliance with all applicable federal, state, and local regulations.

This plan defines site-specific hazards and controls to prevent injury and illness among AMEC personnel for tasks performed by AMEC. Its implementation is in concert with the written AMEC Accident Prevention Program.

This plan has been reviewed by the Project Manager and Project Health and Safety Officer. Prior to entering the site, AMEC personnel shall read this plan and be familiar with health and safety procedures required when working on site. A copy of the plan shall be available on site for inspection and review.

3.0 PROJECT AND SITE DESCRIPTION

The site is located within the Contra Costa Power Plant (CCPP), which is an active natural gas power plant. The site is owned by Mirant Delta, LLC (Mirant). Current power plant features in or near the areas within which work will be conducted include an electrical switching yard, administrative offices, and a fuel oil tank farm. The environmental investigation activities, which will be conducted on behalf of Pacific Gas and Electric Company (PG&E) will consist of advancing soil borings using a direct-push drill rig and hand augers to collect soil and groundwater samples for chemical analysis.

4.0 PRIMARY RESPONSIBILITIES

The field responsibilities of the primary representatives who will oversee health and safety during site activities are described in this section.

4.1 PROJECT MANAGER

The Project Manager (PM) will have overall responsibility for the success of the project, including the successful implementation of this HASP. The PM will review health and safety issues as needed and as consulted and will have the authority to reallocate resources and personnel to safely accomplish the field work.

In addition, the PM shall:

1. Direct all AMEC personnel involved in investigative, monitoring, and remedial activities at the site and vicinity;

2. Make the Project Health and Safety Officer aware of all pertinent project developments and plans;

3. Make available the resources that are necessary for a safe working environment;

4. Maintain communications with the Client, as necessary; and

5. Verify that all AMEC project personnel have received required training, are aware of the potential hazards associated with site operations, have been instructed in the work practices necessary for personal health and safety, and are familiar with the site HASP's procedures for all scheduled activities and for dealing with emergencies.

4.2 AMEC PROJECT HEALTH AND SAFETY OFFICER

The AMEC Project Health and Safety Officer (PHSO) shall:

1. Conduct periodic site audits and advise project manager and project personnel on all health and safety aspects of investigative, monitoring, and remedial activities conducted by AMEC personnel at the site and vicinity;

2. Specify required exposure monitoring to assess site health and safety conditions;

3. Review any accident/incident reports and make corrective action recommendations;

4. Modify the site HASP as required based on accidents/incidents and findings regarding site hazards and work practices;

5. Report all accidents/incidents and findings regarding personnel exposure, site hazards, and work practices to the PM; and

6. Suspend hazardous site work if the PHSO believes that AMEC or a contractor's personnel are or may be exposed to an immediate health hazard.

4.3 AMEC SITE HEALTH AND SAFETY OFFICER

The AMEC Site Health and Safety Officer (SHSO) may be a person dedicated to this task, or the SHSO functions may be a collateral duty of the Site Supervisor. The SHSO is required to be onsite during all work activities conducted by AMEC and shall:

1. Verify that appropriate personal protective equipment is available for AMEC site personnel and enforce proper utilization of personal protective equipment by all on-site AMEC personnel;

2. Verify that all AMEC personnel have received required training, are aware of the potential hazards associated with site operations, have been instructed in the work practices necessary for personal health and safety, and are familiar with the site HASP's procedures for all scheduled activities and for dealing with emergencies;

3. Observe AMEC's and contractor's procedures with respect to health and safety. If the SHSO believes that AMEC or a contractor's personnel are or may be exposed to an imminent health hazard, the SHSO shall suspend the hazardous site work. If site personnel do not have required protective equipment, the SHSO shall consult with the PHSO before proceeding with the work;

4. Implement the site HASP and report any observed significant differences from the site conditions anticipated in the plan to the project manager;

5. Conduct daily site safety briefings and additional briefings as needed;

6. Calibrate monitoring equipment daily and properly record and file calibration and monitoring results;

7. Under direction of the PHSO perform required exposure monitoring;

8. Maintain monitoring equipment or arrange maintenance as necessary;

9. Assume other duties as directed by the PHSO; and

10. Prepare reports of any observed accidents/incidents or inadequate work practices and communicate them to the PM and PHSO.

4.4 SITE SUPERVISOR

The Site Supervisor (SS) shall:

1. Maintain control of the site and direct daily site operations to be consistent with applicable environmental and health and safety regulations, site work plans and this project HASP, and enforce safe work practices and proper utilization of personal protective equipment by all on-site AMEC and contractor personnel;

2. With guidance from the PHSO, observe AMEC and contractor's procedures with respect to health and safety. If the SS believes that AMEC or a contractor's personnel are or may be exposed to an imminent health hazard, the SS shall suspend the hazardous site work coordinating that suspension through the subcontractor's site supervisor. If site personnel do not have required protective equipment, the SS shall consult with the PHSO before proceeding with the work;

3. Implement the site HASP and report any observed significant differences from the site conditions anticipated in the plan to the PM;

4. Conduct site safety briefings as needed;

5. Ensure that required personal protective, monitoring, and emergency equipment is provided and maintained in effective working condition at all times when work occurs on site; and

6. Report observed accidents/incidents or inadequate work practices to the project manager and the PHSO.

4.5 PROJECT PERSONNEL

Project personnel involved in on-site investigations and operations shall:

1. Take reasonable precautions to prevent injury to themselves and to their fellow employees;

2. Perform only those tasks that they can do safely and immediately report accidents and/or unsafe conditions to the SHSO or PHSO;

3. Follow the procedures set forth in the site HASP and report to the SHSO, SS, or PHSO any observed deviations by AMEC or contractor personnel from the procedures described in the plan; and

4. Inform the SHSO and PHSO of any physical conditions that might affect their ability to perform the planned field tasks.

4.6 TRAINING REQUIREMENTS

All personnel working within the project area must comply with OSHA regulations (specified in 29 CFR 1910.120 and CCR Title 8, Section 5192 i.e., 40 hour trained personnel). These include completion of a 40-hour health and safety-training course for HAZWOPER, an annual 8-hour refresher training, and participation in AMEC's medical surveillance program and respiratory protection program. In addition to the 40-hour course and 8-hour refreshers, the SS (and SHSO, if performing the duties of the SS) will have completed an 8-hour course for hazardous waste site supervisors as required by OSHA regulations. Workers using atmosphere-supplying respirators (self-contained breathing apparatus or airline respirators) will have at least 80 hours of training, with over 40 hours of the training focused on the hazards requiring the use of such respirators and associated chemical protective clothing.

Any other persons on site entering the Exclusion Zone or Decon Zone must show documentation of current 40-hour training, unless escorted by an AMEC 40-hour technician and only in the zone for a short period of time.

At least one AMEC staff on site will be current in CPR/First Aid. Documentation of all required training will be maintained on site by the SS. Each site worker will also have a minimum of

3 days of supervised field experience at hazardous waste sites before being allowed to work on site without close direct supervision.

Additional site-specific training that covers on-site hazards; personal protective equipment (PPE) requirements, use, and limitations; decontamination procedures; and emergency response information as outlined in this site HASP will be given by the PHSO or SHSO before beginning on-site work. Site-specific training briefings should be documented on the “Project Health and Safety Field Meeting Form” provided at the end of this HASP.

4.7 MEDICAL SURVEILLANCE

All AMEC personnel on site shall participate in AMEC’s medical surveillance program, which includes annual audiometric and physical examinations for employees involved in HAZWOPER projects. It requires that all such personnel have medical clearance before being issued a respirator and participating in field activities. Frequency of medical examinations which comply with 29 CFR § 1910.120(f)(3) are:

1. Prior to performing field work;
2. At least once every 12 months;
3. At termination of employment;
4. Upon occurrence of possible unprotected overexposure to chemicals or harmful physical agents; and
5. More frequently if deemed necessary by a physician.

5.0 HAZARD ASSESSMENT

An assessment of the potential hazards that may be encountered during field activities at the site is summarized in the table below and discussed further in this section. The task-specific Job Safety Analysis is included in Appendix A. This covers the hazards to AMEC staff only. Subcontractors have many additional hazards specific to their activities, which are identified and appropriate controls specified, in their HASP.

ANTICIPATED HAZARDS

Chemical	**X**
Slip/Trip/Fall	**X**
Excavation	
Biological	
Heavy Equipment	**X**
Working from Heights	
Underground Utilities	**X**
Overhead Power Lines	**X**
Electrical	**X**
Noise	**X**
Heat Stress	**X**
Cold Stress	**X**
Sunburn	**X**
Sharp/Abrasion/ Pinch Points	**X**

5.1 POTENTIAL CHEMICAL HAZARDS AT THE SITE

Listed below are hazardous substances that have been found or are suspected to be present at the site based on historical samples of soil and groundwater. Available information on the detected and suspected chemicals, including their acute exposure effects, is summarized in the table below. Additional details are included at the end of this HASP. Air monitoring requirements and action levels related to potential chemical hazards on the site are discussed in Section 6.0.

POTENTIAL CHEMICAL HAZARDS ON SITE

Chemical	Exposure Limits Cal/OSHA (ppm)	Exposure Limits ACGIH (ppm)	Maximum Concentrations Detected at Site	Routes of Exposure[1]	Acute Exposure Symptoms
Soil					
Lead	0.05/I100	0.05	30 mg/kg	RISE	Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypotension
Arsenic	0.01/I5	0.01	6.9 mg/kg	RISE	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin, [potential occupational carcinogen]
Chromium (total)	0.5/I25	0.5	630 mg/kg	RISE	Irritation eyes; sensitization dermatitis
Polycyclic Aromatic Hydrocarbons (PAHs)	0.2/I80	0.2	B(a)P TEQ = 73.75 mg/kg Benzo(a)pyrene = 8.6 mg/kg	RSE	Dermatitis, bronchitis, [potential occupational carcinogen]
Total Extractable Hydrocarbons	None	100	1,900 mg/kg	RISE	Skin Irritation
Groundwater					
Arsenic	0.01/I5	0.01	160 µg/L	RISE	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin, [potential occupational carcinogen]
Total Extractable Hydrocarbons	None	100	220 µg/L	RISE	Skin Irritation

Notes
1. Exposure limits: If not specified, exposure limit is the PEL or the TLV-TWA, Exposure limit preceded by an “S” is a Short Term Exposure Limit, by a “C” is a Ceiling Limit, and by an “I” is the NIOSH IDLH.
2. Exposures routes: R = respiratory, I = ingestion, S = skin absorption, E = eyes.
3. mg/kg = milligrams per kilogram
4. µg/L = micrograms per liter

Air monitoring requirements and action levels related to potential chemical hazards on the site are discussed in Section 6.0.

5.2 Potential Physical Hazards at The Site

Potential physical hazards listed in the table above are discussed below.

5.2.1 Slip, Trip, and Fall Hazards

The work area is on paved and gravel-covered ground. Walking in the vicinity or near equipment, tools, materials, and debris poses a significant trip hazard potential. Work items will be organized to minimize hazards, and holes or other trip hazards will be flagged as needed to alert workers. Wet conditions can pose a significant slip hazard. Appropriate nonskid footwear will be worn on site at all times.

5.2.2 Heavy Equipment Hazards

Personnel working on site in the vicinity of operating heavy equipment will wear high-visibility, flame-retardant safety vests and maintain safe distances from the equipment to avoid contact with moving equipment parts, such as the bucket or boom (be aware of swing radius), tires, and tracks. Site personnel will get positive acknowledgement that the equipment or truck operator approves of their location whenever they are within strike distance of the equipment. Equipment and vehicles will be approached only from the front or side of the cab. Ground personnel will avoid unnecessary proximity to pressurized hydraulic lines, which can unexpectedly burst while working under load.

5.2.3 Underground Utility Hazards

An underground utility check shall be performed prior to initiating any subsurface investigation or work. The check will include:

X	USA—Note:	USA must be notified at least 2 working days before any subsurface work begins. Record confirmation number in project field notes.
X	Private Locator	

5.2.4 Overhead Power Lines

Whenever possible, site personnel will avoid working under overhead high-voltage lines. The SS is responsible for documenting a determination of the voltage and minimum approach distance to any potentially energized electrical distribution line. Lines will be needed to be deenergized when minimum approach distances cannot be met. The utility owner must confirm that the line(s) have been fully deenergized before work can continue. The following are minimum clearances for overhead high voltage lines.

Minimum Clearances For Overhead High Voltage Lines

Normal Voltage (phase to phase)				Minimum Required Clearance (feet)
more than	750	-	50,000	10
more than	50,000	-	75,000	11
more than	75,000	-	125,000	13
more than	125,000	-	175,000	15
more than	250,000	-	379,000	21
more than	370,000	-	550,000	27
more than	550,000	-	1,000,000	42

(Reference: CCR Title 8, Section 2946, Table II)

5.2.5 Drilling Hazards

Drilling hazards include noise, heavy equipment operation, rotative/moving parts, and trip/fall hazards. Non-drilling personnel should stay away from the area around the borehole during drilling. Hard hats and safety glasses shall be worn by all personnel within 30 feet of the raised mast of an operating drill rig. All personnel will be instructed as to the location of the “kill switch” on the drill rig.

5.2.6 Electrical Hazards

To prevent electrocution hazards from electrical utilization equipment, all electrical extension cords will be rated for the combined amperage of the equipment they power, and must be factory listed as rated SJOW or STOW (an “-A” extension is acceptable for either) and inspected prior to use for defects in the cord and plugs. Cords showing any reduction in the original jacket or evidence of overheating (cord discoloration or melting) will be destroyed and replaced as necessary. The following safe work practices will also be enforced.

- During drilling activities that utilize the drill rig, the rig chassis will be grounded by attaching a 2/0 welding cable to appropriate grounding locations.
- No exposed energized conductors operating above 50 volts to ground will be allowed on site unless properly guarded from contact by unqualified persons.
- Electrical distribution systems and repairs to utilization equipment operating above 50 volts to ground will be performed only by a qualified licensed electrician.
- All portable power tools will be inspected for defects before use and be a double-insulated design.
- Any generator brought on site will be grounded to a suitable earth and will be equipped with overcurrent protection.

- All extension cords running outside will be protected by a ground-fault circuit interrupter, which will be tested daily.

- No extension cords will be routed through walls, ceilings, doors, or windows.

5.2.7 Noise Hazards

Site personnel will wear hearing protection when working near large heavy equipment or in other noisy conditions. Hearing protection will be worn when two people standing within 3 feet of each other cannot communicate at normal conversational voice levels. This is to prevent hearing loss that can occur when daily 8-hour time weighted average noise exposures meet or exceed 85 decibels (dBA). Unless otherwise specified, work will be limited to the hours of 7 AM to 7 PM during which time normal construction noise impacts are permitted.

5.2.8 Heat Stress Hazards

Heat stress is a moderate hazard during the late fall months in California, but becomes a significant hazard for workers wearing protective clothing. To avoid heat stress, at least one quart of cool potable water will be readily available per person per hour, and site personnel will be encouraged to drink plenty of fluids and take periodic work breaks in hot weather. If site personnel run out of water, they are authorized to stop work and replenish their supplies. If weather exceeding 85 degrees occurs, the site a shaded or air conditioned area will be identified where rest breaks can be taken. If no such area exists on site, a portable canopy will be set up. The signs, symptoms, and treatment of heat stress are listed below.

- Heat rash may result from exposure to heat or humid air.

- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include muscle spasms and pain in the hands, feet, and abdomen. Persons experiencing these symptoms should rest in a cooler area, drink cool (not cold) liquids, and gently massage cramped muscles.

- Heat exhaustion involves increased stress on various body organs brought on by inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include pale, cool, moist skin; heavy sweating; dizziness; nausea; and fainting. Persons experiencing these symptoms should lie down in a cooler area, drink cool liquids with electrolytes (Gatorade, etc.), remove any protective clothing, and cool body with wet compresses at forehead, back and neck, and/or armpits.

- Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury or death occurs. Competent medical help must be obtained. Signs and symptoms are red, hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; and coma.

If site temperatures are forecast to exceed 85 degrees Fahrenheit and physically demanding site work will occur in impermeable clothing, the SHSO will consult with the PHSO and a radial pulse monitoring method will be implemented to ensure that heat stress will be properly managed among the affected workers. The following chart indicates the relative risk of heat stress.

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution Extreme Caution Danger Extreme Danger

Combined temperature and humidity conditions that result in a heat index exceeding 100 will trigger mandatory radial pulse monitoring and heat stress management.

5.2.9 Cold Stress Hazards

Exposure to even moderate levels of cold can cause the body's internal temperature to drop to a dangerously low level (hypothermia). Additionally, wearing wet clothing in cool temperatures can also result in hypothermia. This is a moderate hazard in the late fall and winter months in California. Exposure to temperatures below freezing can cause frostbite of hands, feet, and face. Symptoms of hypothermia include:

- vague, slow, slurred speech;
- forgetfulness, memory lapses;
- inability to use hands;
- frequent stumbling;
- drowsiness.

To prevent hypothermia, site personnel will avoid unprotected exposure to wet conditions. Site personnel will wear outer clothing that is wind- and waterproof and inner layers sufficient to retain warmth (wool or polypropylene). If clothing gets wet, work should be shopped and dry clothing placed on. If wet weather conditions are anticipated or occur, the hazards of the work of the day should be reevaluated and the JSA modified as necessary.

5.2.10 Sunburn Hazards

Skin exposure to ultraviolet radiation can result in sunburn. Site personnel will use long-sleeved shirts, hats, and sunscreen to protect against sunburn.

5.2.11 Sharp/Abrasion/Pinch Point Hazards

Site debris, equipment, tools and materials may have sharp edges or abrasive surfaces that pose a hazard to unprotected skin. Heavy leather gloves will be worn when handling such items. When applying force to sharp tools, the travel path of the tool will be anticipated and kept clear should the tool slip under pressure. Heavy items such as well covers and machinery such as drill rig equipment may pose pinch point hazards. Tools such as manhole keys will be used when possible to prevent exposure to the pinch hazard, and personnel will take care to keep hands away from other pinch hazards that cannot be guarded.

5.3 GENERAL SAFE WORK PRACTICES

In working with or around any hazardous or potentially hazardous substances or situations, site personnel should plan all activities before starting any task. Site personnel shall identify health and safety hazards involved with the work planned and consult with the PHSO or SHSO as to how the task can be performed in the safest manner, if he/she has any uncertainties.

All field personnel will adhere to the following general safety rules.

1. Wear protective equipment and clothing specified for tasks.
2. Wear a hard hat and safety glasses in all outdoor areas.
3. Keep materials, equipment, ropes, lines, and debris organized, and flag trip hazards.
4. Do not eat, drink, or use tobacco or cosmetics in restricted work areas.
5. Prevent splashing of liquids containing chemicals, and minimize emissions of dust.
6. Prevent back injury by never lifting or carrying a load that is heavier than you can comfortably handle. When lifting heavy objects, first test the load and get assistance when necessary. Bend the knees, use the leg muscles, and avoid twisting with a load by positioning the feet.

7. Keep all heat and ignition sources away from combustible liquids, gases, or any flammable materials. When working in areas where combustible gases may be present, use only intrinsically safe (nonsparking) equipment. This includes cell phones.

8. Field personnel shall be familiar with the physical characteristics of the site, including:

   - Evacuation assembly area;
   - wind direction in relation to restricted work areas;
   - accessibility of other personnel, equipment, and vehicles;
   - areas of known or suspected chemicals in soil and groundwater;
   - site access;
   - nearest water sources; and
   - location of communication devices.

9. When in doubt of your safety, it is better to overprotect.

10. Practice defensive driving.

6.0 AIR MONITORING

Based on the type of the job safety analysis and minimal impact of the sampling program, exposure monitoring should not be required for the tasks covered by this HASP. If site conditions change, the need for exposure monitoring will have to be re-evaluated.

7.0 PERSONAL PROTECTIVE EQUIPMENT

A Level D PPE ensemble will be the minimum outfit for all activities with the main objective to prevent unnecessary dermal exposure. If Level C environments are encountered, cartridges will be changed at least every 4 hours, or if breathing resistance or odors are detected. The following PPE is required, unless a change is approved by the PHSO.

PPE REQUIREMENTS BY TASK

Steel Toe & Shank Boots	X
Safety Glasses	X
Hard Hat	X
Face Shield	
Ear plugs / Muffs	Av
Inner Nitrile Gloves	X
Outer Leather Gloves	Av
Permeable Tyvek Coverall	
Impermeable Coverall	
High-Visibility, Flame-Retardant Vest	X

Key:
X = PPE Required
O = PPE Optional
Av = Have available at work site, use as needed

8.0 SITE CONTROL

In compliance with 29 CFR 1910.120(b)(4)(ii)(f) and 29 CFR 1910.120(d), this site control program is designed to reduce the spread of hazardous substances from contaminated areas to clean areas, to identify and isolate contaminated areas of the site, to facilitate emergency evacuation and medical care, to prevent unauthorized entry to the site, and to deter vandalism and theft.

The site control program includes the elements specified in 29 CFR 1910.120(d) and provides the following site-specific information:

- site access procedures;
- site security;
- site work zones including standard operating procedures;
- use of the buddy system; and
- both internal (on-site) and external communications.

The SHSO is responsible for evaluating site conditions and for verifying that the site control program functions effectively. The site control program is updated regularly by AMEC staff to reflect current site conditions, work operations, and procedures.

8.1 SITE ACCESS

Access to this site is restricted to reduce the potential for exposure to safety and health hazards. Entry and exit to the site is controlled by site security personnel. Subcontractors who will perform work at the site are required to sign in at the Administration building and view a Mirant training video prior to commencing work. This training should be coordinated with the SHSO.

Visitors to the site register with SHSO and are escorted at all times. Visitors are required to comply with the requirements of this HASP. Visitors who want to enter contaminated areas of the site must provide documentation that they have the required training and medical evaluation and must receive a site-specific briefing about protecting themselves from site hazards, recognizing site zones demarcations, and following emergency evacuation procedures. PPE for visitors is provided by the SHSO or SS.

8.2 SITE SECURITY

Security at this site is maintained during both working hours and non-working hours to prevent unauthorized entry; removal of contaminated material from the exclusion zone; exposure of unauthorized, unprotected people to site hazards; and increased hazards due to vandalism and theft.

8.3 SITE WORK ZONES

This site is divided into two zones: an exclusion zone and a decontamination area. These zones are characterized by the presence or absence of chemical hazards and the activities performed within them.

8.3.1 WORK AREA

An exclusion zone will be set up immediately surrounding the site work areas. Only authorized personnel shall be permitted access to the exclusion zone. If practical, the exclusion zone will be cordoned with barriers, cones, or fencing to limit unauthorized access. No eating, drinking, or smoking allowed in the exclusion zone.

8.3.2 DECONTAMINATION AREAS

Equipment and personnel decontamination areas will be set up adjacent to the work exclusion zones. All equipment and tools used during work activities shall be decontaminated in the designated decontamination area. Decontamination procedures are described in Section 9.0 of this plan.

8.4 SITE COMMUNICATIONS

An AMEC field representative will contact the PM or office at the start and end of each day while on site. Upon initial mobilization to the site, cell phone signals will be checked for those phones available to the SS and SHSO. On-site communications will be by voice, hand-held radio, or cell phone. Under noisy conditions on site, or when electronic systems are ineffective, a written system of hand signals will be established by the SS and reviewed with all site personnel to enable basic communications among field staff.

9.0 DECONTAMINATION

Equipment and personnel decontamination areas will be set up adjacent to the work exclusion zones. All equipment and tools used during work activities shall be decontaminated in the designated decontamination area as described below.

9.1 PERSONNEL DECONTAMINATION PROCEDURES

Remove disposable gloves and clothing and place in plastic bags. Wash hands and face before eating, drinking, or smoking and at the end of the work day. In case of a medical emergency concerning an individual who has been exposed in the exclusion zone, protective clothing will be removed by appropriately protected personnel as necessary.

9.2 DECONTAMINATION PROCEDURES FOR HEAVY EQUIPMENT

Clean equipment that may come in contact with soil or groundwater at the site prior to and after each use. Wash with detergent and rinse with potable water and/or distilled water, if necessary.

10.0 EMERGENCY RESPONSE

This section describes the emergency response plan. A refuge area will be identified by the SS and communicated to the field team each day. This point will be clear of adjacent hazards and preferably up- or cross-wind for the entire day. In an emergency, all site personnel and visitors will evacuate to the designated refuge area for roll call versus the daily site log. It is important that each person on site understand their role in an emergency, and that they remain calm and act efficiently to ensure everyone’s safety. After the project team is safely evacuated to the refuge area, the CCPP control room will be notified of the emergency at (925) 779-6575.

After every emergency is resolved, the entire project team will meet and debrief on the incident—the purpose is not to fix blame, but to improve the planning and response to future emergencies. The debriefing will review the sequence of events, what was done well, and what can be improved. The debriefing will be documented in a written format and communicated to the PHSO. Modifications to the emergency plan will be approved by the PHSO.

Reasonably foreseeable emergency situations include medical emergencies, accidental release of hazardous materials (such as asbestos, gasoline, or diesel) or hazardous waste, and general emergencies such as fire, thunderstorm, flooding, and earthquake. Expected actions for each potential incident are outlined below.

10.1 MEDICAL EMERGENCIES

In the event of a medical emergency, the following procedures should be used.

1. Stop any imminent hazard if you can safely do it.
2. Remove ill, injured or exposed person(s) from immediate danger if moving them will clearly not cause them harm, and no hazards exist to the rescuers.
3. Evacuate other on-site personnel to a safe place in an upwind or cross-wind direction until it is safe for work to resume.
4. If serious injury or life-threatening condition exists, call:

   CCPP Control Room at (925) 779-6575

   CCPP control room personnel will then contact paramedics, fire department, or police

   Clearly describe the location, injury and conditions to the dispatcher. Designate a person to go to the site entrance and direct emergency equipment to the injured person(s). Provide the responders with a copy of this HASP, to alert them to chemicals of potential concern.
5. Trained personnel may provide first aid/cardiopulmonary resuscitation if it is necessary and safe to do so. Remove contaminated clothing and PPE only if this can be done without endangering the injured person.
6. Call the PHSO or PM.
7. Immediately implement steps to prevent recurrence of the accident.

A map showing the nearest hospital location is attached to this HASP (Appendix B).

Sutter Delta Medical Center
3901 Lone Tree Way
Antioch, CA 94509
(925) 779-7200

Copies of the hospital locations and route map will be maintained in project vehicles.

Telephone number of nearest **Poison Control Center: <u>(800) 876-4766</u>**

10.2 GENERAL EMERGENCIES

In the case of fire, explosion, earthquake, or other imminent hazard, work shall be halted and all on-site personnel will be immediately evacuated to a safe place. The local police/ fire department shall be notified if the emergency poses a continuing hazard by calling the CCPP control room at (925) 779-6575.

- In the event of a thunderstorm, outdoor work will be discontinued until the threat of lightning has abated.
- During the incipient phase of a fire, the available fire extinguisher(s) may be used by persons trained in putting out fires, if it is safe for them to do so. Contact the fire department as soon as feasible.

10.3 EMERGENCY COMMUNICATIONS

In the case of an emergency, the air horn or car horn will be used as needed to signal the emergency. One long (5-second) blast will be given as the emergency/stop work signal. If the air horn is not working, a vehicle horn and/or overhead waving of arms will be used to signal the emergency. In any emergency, all personnel will evacuate to the designated refuge area and await further instruction. In addition, CCPP has an emergency notification system, which will consist of a notification alarm and broadcasted instructions.

10.4 EMERGENCY EQUIPMENT

The following minimum emergency equipment will be readily available on site and functional at all times:

- First Aid Kit—Contents approved by the PHSO, including two bloodborne pathogen barriers;
- Sorbent material sufficient to contain the volume of the largest single container of hazardous materials (e.g., gas and diesel) brought on site;
- Portable fire extinguisher (2-A:10 B/C min) – stored in visible and easily accessible locations;
- Two spare sets of PPE suitable for entering the exclusion zone; and
- A copy of the current site-specific health and safety plan.

11.0 APPROVALS

March 10, 2010

Project Manager | Date

March 10, 2010

Project Health and Safety Officer | Date

March 10, 2010

Site Safety Officer | Date

PROJECT HEALTH AND SAFETY FIELD MEETING FORM

Date: ______________________ Time: ______________ Project No.: _____________

Project Name: ____

Location: ____

Meeting Conducted by: ____

Topics Discussed:

Physical Hazards:

Chemical Hazards:

Personal Protection:

Decontamination:

Other: ____

____

____

____

____

Emergency Information: ____

Hospital Location: ____

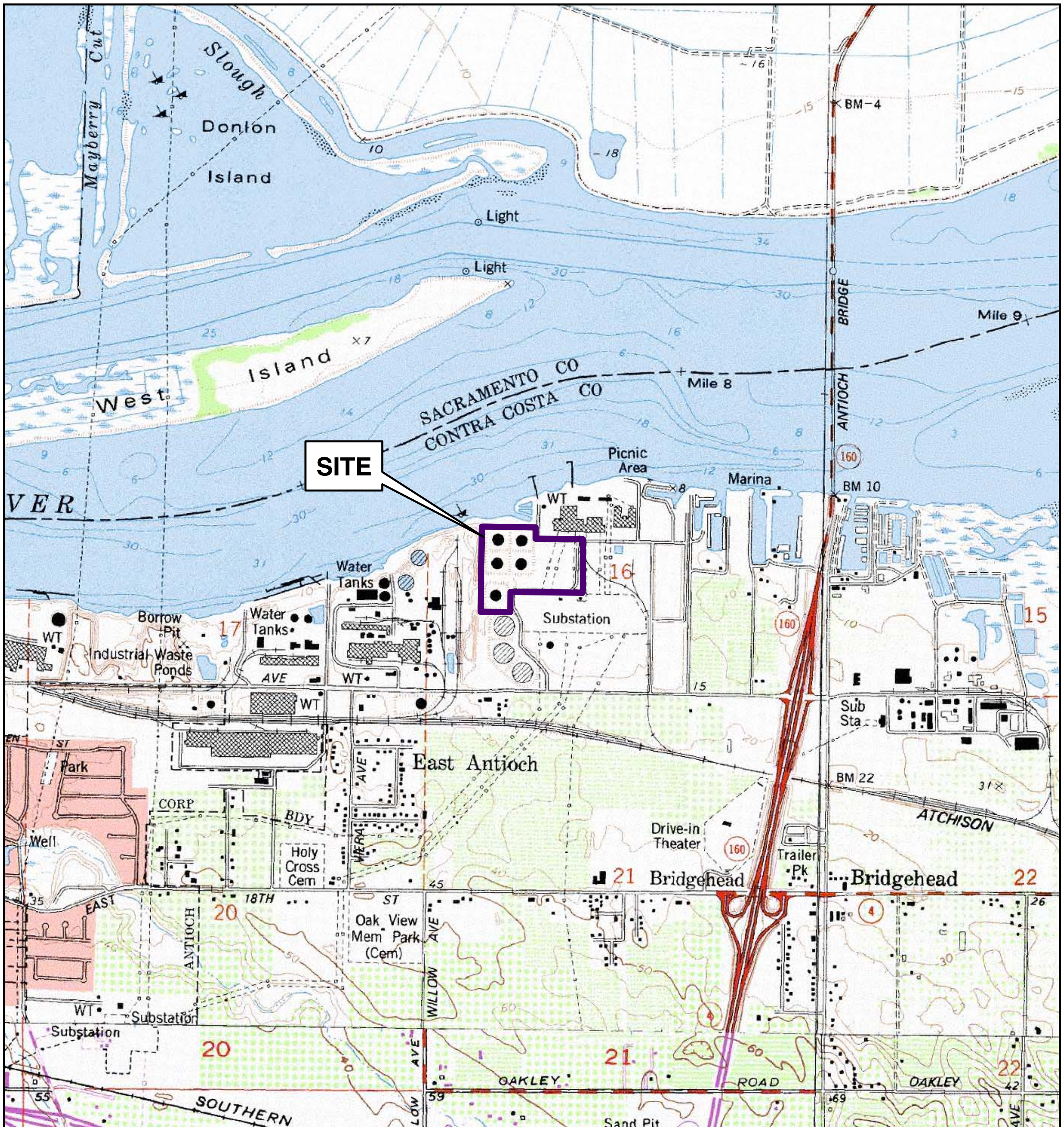
Attendees

Name/Company (printed)	Signature

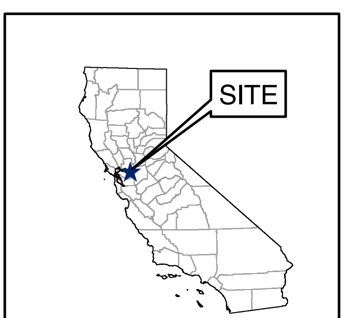
Meeting Conducted by: ______________________________

Signature

FIGURES



Base map from USGS 7.5' Antioch North, Antioch South, Brentwood and Jersey Island, California topographic quadrangles.



N

0 2,000 4,000 Feet

SITE LOCATION MAP
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 11/9/2009	Project No. 15317.000

AMEC Geomatrix

Figure 1

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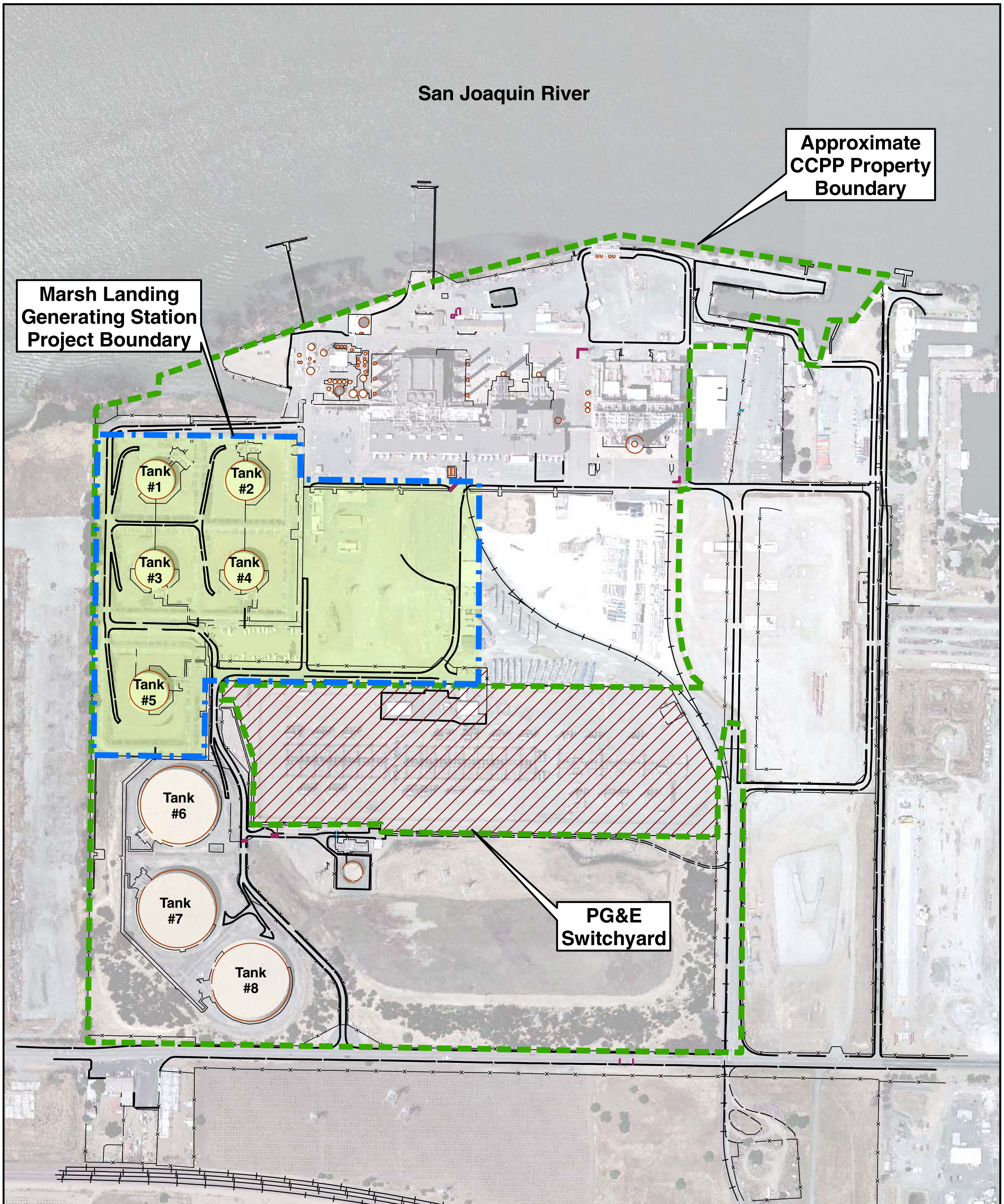

Aerial image from USGS digital orthophoto dated May 23, 2002.

0 500 1,000 Feet

N

SITE PLAN AND FACILITY LAYOUT
Marsh Landing Generating Station
Mirant Contra Costa Power Plant
Contra Costa County, California

By: MMG	Date: 11/20/2009	Project No. 15317.000
AMEC Geomatrix		Figure 2

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APPENDIX A

Job Safety Analyses

JOB SAFETY ANALYSIS

JSA #1

Project Name: Marsh Landing GS		Project No: 15317.000	Date: 02/25/10
Task: Drilling and Sampling		Task Location: 3201 Wilbur Avenue, Antioch, CA	
Completed by: Jonathan Skaggs		Reviewed by: Don Kubik	
Notes:			

Task	Hazard	Risk Control Method
Mobilization To Site	Driving accidents	Vehicle to be fit for purpose and well maintained.
		Loads to be secure and not to exceed vehicle specifications or legal limits.
		Driver to be licensed, trained and medically fit
		Driver to be rested and alert
		Minimize cell phone use
		PLAN YOUR ROUTE AHEAD OF TIME
		Driver must not be under the influence of alcohol, drugs or medication that impairs ability to drive vehicle.
Set Up Work Site	Auto / public traffic	Notify attendant or site manager / owner of work activities and location.
		Work location to be barricaded off; vehicle and pedestrian traffic management plan as required
	Hyperthermia	If rain is expected, set up a mobile shelter to keep clothes dry. Care should be taken to avoid pinch points during mobile shelter setup.
		High visible clothing, steel cap boots, long sleeves/pants/ hard hat / safety glasses to be worn at all times while in operational areas
		Inspect area around vehicle prior to putting vehicle in motion and use spotter
	Uneven or unstable ground	Visually examine site prior to entry.
		Place timbers under outriggers to spread load.
	Overhead power lines	Look overhead prior moving rig or raising mast. Mast must be12 feet away from power lines or as required by local power authority.
		Electrical spotter to be employed when working within 10 to 20 feet of the lines; power company permit also required
	Underground services	Underground services to be located prior to breaking ground by qualified service locator
Drill Rig Set-Up	Rig roll over	Do not move rig with raised mast
		Cross all hills and obstructions head on
		Set jack or out-riggers prior to raising mast
	Contact with electric lines	Ground drill rig to the predetermined grounding locations discussed during the December 9, 2009 site visit.
		Check for unstable soil – assess soil by qualified professional engineer if required.
	Contact with electric lines and other overhead obstacles	Position rig to avoid overhead utility lines by distance defined by voltage and local regulations
	Contact with electric lines and other overhead obstacles (cont'd)	Use spotter when raising mast to confirm clearance of overhead lines and other obstructions
	Injury by moving rig / vehicles	Heavy equipment shall be equipped with back-up alarms

Task	Hazard	Risk Control Method
Soil Boring / Drilling	Faulty or inappropriate equipment	Qualified driller must inspect rig prior to use. Faulty or inappropriate, equipment shall be put out of service and replaced / repaired
		Inspect all hand tools prior to use. If faulty or inappropriate, do not use until repaired or replaced
	Moving / rotating equipment	All appropriate guarding to be in place prior to use
		Set-up adequate exclusion zone – only trained, inducted and authorized personnel within this area
	Moving / rotating equipment (cont'd)	Stay clear of rotating auger / equipment – no hands, feet or any body part to be near rotating equipment. Rotation to stop for sampling etc.
		Wear appropriate PPE including leather gloves, steel capped boots, hard hat, and safety glasses. Full length overalls or long sleeve shirt and long pants - no loose clothing, fire retardant clothing (FRC) when appropriate.
	Impact by suspended loads	Do not walk under suspended loads
	Hearing damage from high noise levels	USE HEARING PROTECTION (EAR MUFFS OR EAR PLUGS) IF NOISE > 85 db
	Vapors and airborne particulates	MONITOR AIR CONCENTRATIONS USING PHOTO-IONISATION DETECTOR, LEL METER etc
		Stop work if hazardous conditions identified (explosive atmosphere, oxygen deficient or enriched atmosphere) – reassess and take the necessary precautions.
		Wear appropriate PPE including face shield / safety glasses, dust masks or respirators, long sleeve shirts and pants, FRC when appropriate.
	Slip, trip & fall	Keep work area tidy and clean – including the removal of excess cuttings.
		Keep work surfaces dry where possible
		Wear appropriate PPE including non-slip rubber boots if working on wet or slick surfaces
	Slip, trip & fall	Stay aware of footing and do not run
	Heat / cold stress	Take regular breaks on hot days or if feeling faint or overexerted
		Consume adequate food / beverages (water / sports drink)
		If possible, adjust work schedule to avoid temperature extremes
	Biological hazards: insects, snakes, wildlife, vegetation	Carefully inspect work area during site inspection to identify hazards
		Use insect repellant
		Open enclosures slowly
		Survey site for presence of biological hazards and maintain safe distance
		Wear appropriate PPE including leather gloves, long sleeves and pants and snake chaps as required
	Underground services	Professional cable locator to locate and identify all services in potential drilling area.
		All soil borings to be either hand augered or air-knifed for the first 5 feet to clear any underground services.
	Working at heights	No work to be conducted on rig at heights greater than 6 feet without fall restraint / arrest safety equipment.
	UV exposure	Wear correct PPE (neck to toe clothing & sun block)
	Wind blown dust	Minimize dust from drilling by use of covers / shields or water when possible. Wear protective glasses or goggles as required.

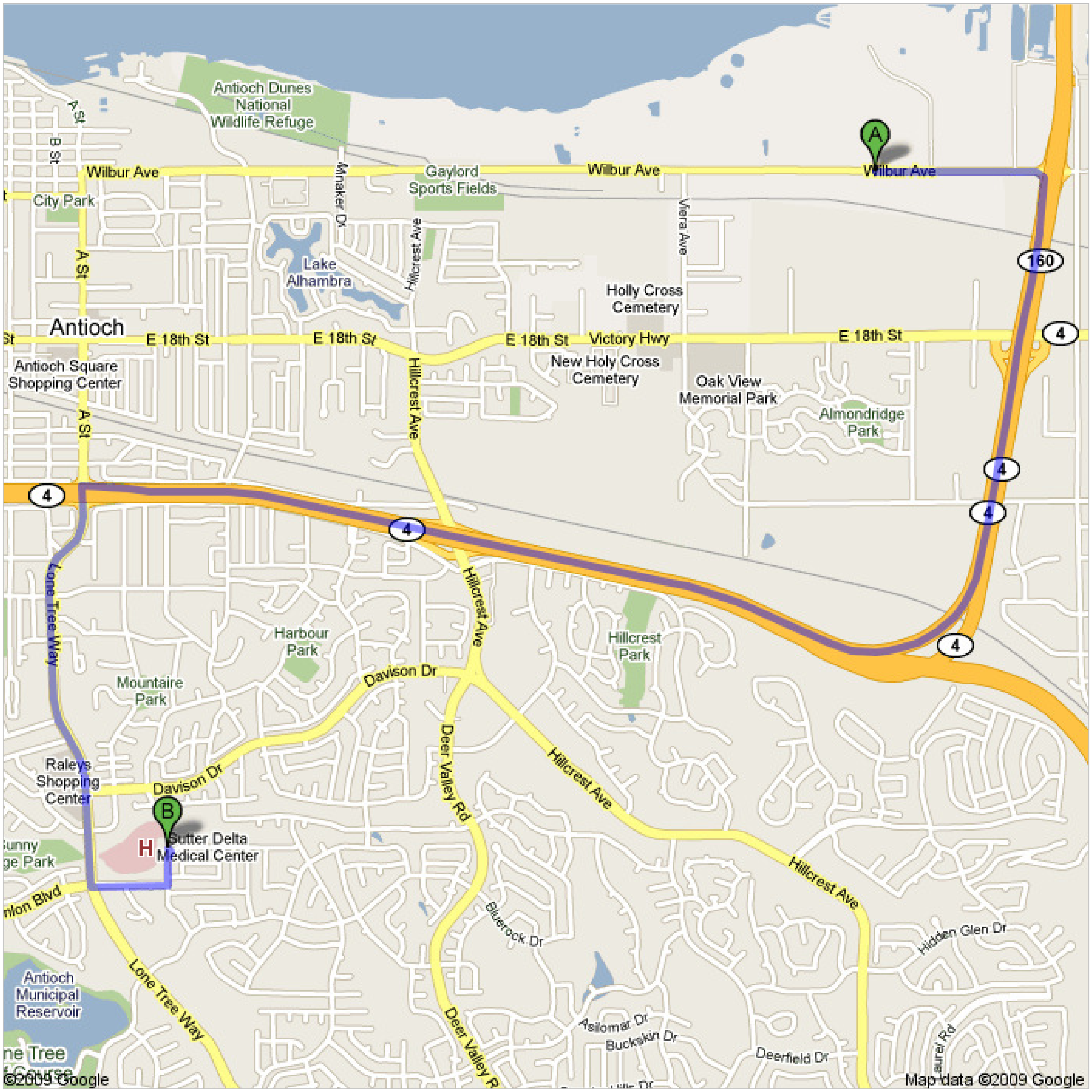
Task	Hazard	Risk Control Method
	Leakage of fuel oil and hydraulic fluid	Have ready access to spill absorbent materials to soak up any spilled hydrocarbons
	Lifting heavy equipment	Do not lift or move heavy equipment without assistance
		Use proper bending / lifting techniques by lifting with arms and legs and not with back. Keep back straight while lifting
		If possible, use powered lift truck, drum cart, or other mechanical means
		Take breaks if feeling faint or over exerted
	Muscle strain injury	Use correct manual lifting methods.
		Wear correct PPE.
	Entanglement with rotating drilling rods and associated equipment	Stand clear of rotating equipment.
		No loose clothing to be worn.
		Driller to manage soil sampling.
Soil Sampling	Handling contaminated materials / soils / groundwater	Wear appropriate PPE including nitrile gloves, safety glasses and neck to toe clothing.
	Sharp sampling tools	Use correct tools for opening split spoon sampler / push tubes
	Vapors	Wear appropriate PPE including respirator if required
	Vapors	Work upwind of sampling area if possible
Any Chemical Use	Injury or adverse effects from chemical exposure	All chemicals to be properly stored & labeled
		Current MSDS to be available for each chemical on-site
		Wear appropriate PPE
		Employees trained on chemical handling
Monitoring well installation	Lifting heavy materials	Do not lift or move heavy equipment without assistance
		Use proper bending / lifting techniques by lifting with arms and legs and not with back. Keep back straight while lifting
		If possible, use powered lift truck, drum cart, or other mechanical means
		Take breaks if feeling faint or over exerted
		Use correct manual lifting methods.
		Wear correct PPE.
	Pinch points	Watch for pinch points when assembling and installing well pieces
	Slip, trip & fall	Keep work area tidy and clean – including the removal of excess cuttings.
		Keep work surfaces dry where possible
		Wear appropriate PPE including non-slip rubber boots if working on wet or slick surfaces

ATTACHMENT B

Map and Directions to Nearest Hospital

Google maps

Directions to Sutter Delta Medical Center
3901 Lone Tree Way, Antioch, CA 94509-6200 - (925) 779-7200
6.2 mi – about **10 mins**



3201 Wilbur Ave, Antioch, CA 94509

1.	Head **east** on **Wilbur Ave** toward **San Joaquin Harbour Rd** About 1 min	go 0.5 mi total 0.5 mi
2.	Take the **State Route 160 S** ramp	go 0.2 mi total 0.7 mi
3.	Merge onto **CA-160 S**	go 0.3 mi total 1.0 mi
4.	Continue onto **CA-4 W** About 3 mins	go 3.4 mi total 4.4 mi
5.	Take the **A St/Lone Tree Way** exit	go 0.2 mi total 4.6 mi
6.	Turn **left** at **A St/Lone Tree Way** Continue to follow Lone Tree Way About 3 mins	go 1.3 mi total 5.9 mi
7.	Turn **left** at **James Donlon Blvd**	go 49 ft total 5.9 mi
8.	Continue onto **Ridgerock Dr** About 1 min	go 0.2 mi total 6.1 mi
9.	Turn **left** at **Boulder Dr**	go 0.1 mi total 6.2 mi
10.	Take the 1st **left** to stay on **Boulder Dr**	go 69 ft total 6.2 mi

Sutter Delta Medical Center
3901 Lone Tree Way, Antioch, CA 94509-6200 - (925) 779-7200

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

April 7, 2010

Project 15317.000

Mr. Tony Natera
Department of Toxic Substances Control
700 Heinze Street, Suite 200
Berkeley, California 94710

Subject: **Errata – Site-Specific Health and Safety Plan**
Marsh Landing Generating Station
3201 Wilbur Avenue
Mirant Contra Costa Power Plant
Contra Costa County, California

Dear Mr. Natera:

On behalf of Pacific Gas and Electric Company (PG&E), AMEC Geomatrix, Inc. has prepared this errata letter for the *Site-Specific Health and Safety Plan*, dated March 2010 (HSP) for the Marsh Landing Generating Station (MLGS) at Mirant's Contra Costa Power Plant (CCPP). The chemical information sheets were not included with the original submittal of the HSP. Please insert the attached chemical information sheets at the end of the HSP.

Please do not hesitate to call the undersigned if you have any questions or require additional information.

Sincerely yours,
AMEC Geomatrix, Inc.

Jonathan M. Skaggs, PG No. 7823
Senior Geologist

Jennifer L. Patterson, PE No. C59161
Senior Engineer

Jms/jh
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Attachment: Chemical Information Sheets for the March 2010 Site-Specific Health and Safety Plan

AMEC Geomatrix, Inc.
2101 Webster Street, 12th Floor
Oakland, California
USA 94612-3066
Tel (510) 663-4100
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AMEC Geomatrix

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September 2005

NIOSH Publication Number 2005-149

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Arsenic (inorganic compounds, as As)

Synonyms & Trade Names Arsenic metal: Arsenia
Other synonyms vary depending upon the specific As compound. [Note: OSHA considers "Inorganic Arsenic" to mean copper acetoarsenite and all inorganic compounds containing arsenic except ARSINE.]

CAS No. 7440-38-2 (metal)	**RTECS No.** CG0525000 (metal) (/niosh-rtecs/CG802C8.html)	**DOT ID & Guide** 1558 152 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (metal) 1562 152 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (dust)
Formula As (metal)	**Conversion**	**IDLH** Ca [5 mg/m3 (as As)] See: 7440382 (/niosh/idlh/7440382.html)

Exposure Limits **NIOSH REL** : Ca C 0.002 mg/m3 [15-minute] See Appendix A (nengapdxa.html) **OSHA PEL** : [1910.1018] TWA 0.010 mg/m3	**Measurement Methods** **NIOSH** 7300 (/niosh/docs/2003-154/pdfs/7300.pdf) , 7301 (/niosh/docs/2003-154/pdfs/7301.pdf) , 7303 (/niosh/docs/2003-154/pdfs/7303.pdf) , 7900 (/niosh/docs/2003-154/pdfs/7900.pdf) , 9102 (/niosh/docs/2003-154/pdfs/9102.pdf) ; **OSHA** ID105 (http://www.osha.gov/dts/sltc/methods/inorganic/id105/id105.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Metal: Silver-gray or tin-white, brittle, odorless solid.

MW: 74.9	**BP:** Sublimes	MLT: 1135°F (Sublimes)	**Sol:** Insoluble	**VP:** 0 mmHg (approx)	**IP:** NA

Sp.Gr: 5.73 (metal)	**Fl.P:** NA	**UEL:** NA	**LEL:** NA		

Metal: Noncombustible Solid in bulk form, but a slight explosion hazard in the form of dust when exposed to flame.

Incompatibilities & Reactivities Strong oxidizers, bromine azide [Note: Hydrogen gas can react with inorganic arsenic to form the highly toxic gas arsine.]

Exposure Routes inhalation, skin absorption, skin and/or eye contact, ingestion

Symptoms Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen]

Target Organs Liver, kidneys, skin, lungs, lymphatic system

Cancer Site [lung & lymphatic cancer]

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily
Provide: Eyewash, Quick drench

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
(See Appendix E) (nengapdxe.html)

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html)

Page last reviewed: February 3, 2009

Page last updated: February 3, 2009
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

OSHA/EPA Occupational Chemical Database

Chemical Identification

Chemical Name: BENZO[A]PYRENE

CAS #: 50-32-8 **UN No:** 3082 **Formula:** C20H12

Synonyms: Synonyms vary depending upon the specific compound (e.g., pyrene; phenanthrene; acridine; chrysene; anthracene & benzo (a)pyrene).

Physical Properties			
Physical Description: Odorless, silver-gray to black solid.			
BP: 5612ºF	**MW:** 58.9	**LEL:** NA	**NFPA Fire Rating:** 1
FRZ/MLT: FRZ: NA	**VP:** NA	**UEL:** 2719ºF	**NFPA Health Rating:** 0
FP: NA	**VD:** NA		**NFPA Reactivity Rating:** 0
Sp. GR: 8.92	**IP:** NA		**NFPA Sp. Inst.:** NA

Exposure Limits		
OSHA	**NIOSH**	**Related Information**
PEL-TWA ppm: NA	**REL-TWA ppm:** NA	**AIHA Emergency Response Planning Guidelines - ERPG-1/ERPG-2/ERPG-3:** NA
PEL-TWA mg/m3: 0.2	**REL-TWA mg/m3:** 0.1	
PEL-STEL ppm: NA	**REL-STEL ppm:** NA	
PEL-STEL mg/m3: NA	**REL-STEL mg/m3:** NA	
PEL-C ppm: NA	**REL-C ppm:** NA	
PEL-C mg/m3: NA	**REL-C mg/m3:** NA	**Carcinogen Classifications:** IARC 2A, NIOSH-Ca, NTP-R, TLV-A2
Skin Notation: No	**Skin Notation:** No	
Notes: COAL TAR PITCH VOLATILE; SEE 29 CFR 1910.1002 (DEFINITION)	**Notes:** CARCINOGEN (Ca); COAL TAR PITCH VOLATILE, CYCLOHEXANE-EXTRACTABLE FRACTION	
	IDLH ppm: NA	
	IDLH mg/m3: 80	
	IDLH Notes: Ca	

NIOSH Pocket Guide to Chemical Hazards (Current through June 2006)			
NA			CAS: NA
Formula: NA			RTECS: NA
Synonyms & Trade Names: NA			DOT ID & Guide: NA
Exposure Limits			
NIOSH REL: NA		OSHA PEL: NA	
IDLH: NIOSH IDLH: NA		Conversion: NA	
Physical Description			
Description: NA			
MW: NA	BP: NA	FRZ: NA	Sol: NA
VP: NA	IP: NA	RGasD: NA	SG: NA
FP: NA	UEL: NA	LEL: NA	MEC: NA
NA (See flammable and combustible liquid classes)			
Incompatibilities & Reactivities			
NA			
Measurement Methods			
NA			
Personal Protection & Sanitation		**First Aid**	
NA		NA (See procedures)	
NIOSH Respirator Recommendations			
NA (See symbols and codes)			
Exposure Routes			
NA			
Symptoms			
NA (See abbreviations)			
Target Organs			
NA (See abbreviations)			

DOT Emergency Response Guidebook (ERG 2004)

Guide Number: 171

171 Substances (Low to Moderate Hazard)
POTENTIAL HAZARDS
FIRE OR EXPLOSION
* Some may burn but none ignite readily.
* Those substances designated with a P may polymerize explosively when heated or involved in a fire.
* Containers may explode when heated.
* Some may be transported hot.

HEALTH
* Inhalation of material may be harmful.
* Contact may cause burns to skin and eyes.
* Inhalation of Asbestos dust may have a damaging effect on the lungs.
* Fire may produce irritating, corrosive and/or toxic gases.
* Runoff from fire control may cause pollution.

PUBLIC SAFETY
* CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
* Isolate spill or leak area immediately for at least 10 to 25 meters (30 to 80 feet) in all directions.
* Keep unauthorized personnel away.
* Stay upwind.

PROTECTIVE CLOTHING
* Wear positive pressure self-contained breathing apparatus (SCBA).
* Structural firefighters' protective clothing will only provide limited protection.

EVACUATION
Fire
* If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE
FIRE
Small Fires
* Dry chemical, CO2, water spray or regular foam.

Large Fires
* Water spray, fog or regular foam.
* Move containers from fire area if you can do it without risk.
* Do not scatter spilled material with high pressure water streams.
* Dike fire-control water for later disposal.

Fire involving Tanks
* Cool containers with flooding quantities of water until well after fire is out.
* Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
* ALWAYS stay away from tanks engulfed in fire.

SPILL OR LEAK
* Do not touch or walk through spilled material.
* Stop leak if you can do it without risk.
* Prevent dust cloud.
* Avoid inhalation of asbestos dust.

Small Dry Spills
* With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Small Spills
* Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Large Spills
* Dike far ahead of liquid spill for later disposal.
* Cover powder spill with plastic sheet or tarp to minimize spreading.
* Prevent entry into waterways, sewers, basements or confined areas.

FIRST AID
* Move victim to fresh air.
* Call 911 or emergency medical service.
* Apply artificial respiration if victim is not breathing.
* Administer oxygen if breathing is difficult.
* Remove and isolate contaminated clothing and shoes.
* In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
* Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Additional Emergency Response Information (CAMEO Data)

Non-fire Spill Response: Keep sparks, flames, and other sources of ignition away. Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Apply water spray or mist to knock down vapors. Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash, cement powder, or commercial sorbents. Water spill: Use natural barriers or oil spill control booms to limit spill travel. Remove trapped material with suction hoses. (AAR, 1999)

Firefighting: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use dry chemical, dry sand, or carbon dioxide. Keep run-off water out of sewers and water sources. (AAR, 1999)

Reactivity: STABILITY: This chemical undergoes photo-oxidation after irradiation in indoor sunlight or by fluorescent light in organic solvents. Solutions of this chemical in benzene oxidize under the influence of light and air. Solutions of this chemical in water, DMSO, 95% ethanol or acetone should be stable for 24 hours under normal lab conditions.REACTIVITY: This chemical is incompatible with strong oxidizers. It readily undergoes nitration and halogenation. Ozone, chromic acid and chlorinating agents oxidize this compound. This chemical may react with organic and inorganic oxidants including various electrophiles, peroxides, nitrogen oxides and sulfur oxides. Hydrogenation occurs with platinum oxide. (NTP, 1992)

First Aid: EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop. SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas. INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing. INGESTION: DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital. OTHER: Since this chemical is a known or suspected carcinogen you should contact a physician for advice regarding the possible long term health effects and potential recommendation for medical monitoring. Recommendations from the physician will depend upon the specific compound, its chemical, physical and toxicity properties, the exposure level, length of exposure, and the route of exposure. (NTP, 1992)

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September 2005

NIOSH Publication Number 2005-149

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SEARCH

Enter search terms separated by spaces.

Chromium(II) compounds (as Cr)

Synonyms & Trade Names Synonyms vary depending upon the specific Chromium(II) compound. [Note: Chromium(II) compounds include soluble chromous salts.]

CAS No.	RTECS No.	DOT ID & Guide
	Conversion	IDLH 250 mg/m3 [as Cr(II)] See: cr2m3 (/niosh/idlh/cr2m3.html)

Exposure Limits

NIOSH REL : TWA 0.5 mg/m3 See Appendix C (nengapdxc.html)
OSHA PEL : TWA 0.5 mg/m3 See Appendix C (nengapdxc.html)

Measurement Methods

NIOSH 7024 (/niosh/docs/2003-154/pdfs/7024.pdf) , 7300 (/niosh/docs/2003-154/pdfs/7300.pdf) , 7301 (/niosh/docs/2003-154/pdfs/7301.pdf) , 7303 (/niosh/docs/2003-154/pdfs/7303.pdf) , 9102 (/niosh/docs/2003-154/pdfs/9102.pdf) ; **OSHA** ID121 (http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.html) , ID125G (http://www.osha.gov/dts/sltc/methods/inorganic/id125g/id125g.html)
See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Appearance and odor vary depending upon the specific compound.

Properties vary depending upon the specific compound.

Incompatibilities & Reactivities Varies

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes; sensitization dermatitis

Target Organs Eyes, skin	
Personal Protection/Sanitation (See protection codes (protect.html)) **Skin:** Prevent skin contact **Eyes:** Prevent eye contact **Wash skin:** When contaminated **Remove:** When wet or contaminated **Change:** No recommendation	**First Aid** (See procedures (firstaid.html)) **Eye:** Irrigate immediately **Skin:** Water flush promptly **Breathing:** Respiratory support **Swallow:** Medical attention immediately

Respirator Recommendations

NIOSH/OSHA

Up to 2.5 mg/m3:
(APF = 5) Any quarter-mask respirator.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*

Up to 5 mg/m3:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*
(APF = 10) Any supplied-air respirator*

Up to 12.5 mg/m3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode*
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.*

Up to 25 mg/m3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter*
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 250 mg/m3:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html)

Page last reviewed: February 3, 2009
Page last updated: February 3, 2009
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

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September 2005

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Chromium(III) compounds (as Cr)

Synonyms & Trade Names Synonyms vary depending upon the specific Chromium(III) compound. [Note: Chromium(III) compounds include soluble chromic salts.]

CAS No.	**RTECS No.**	**DOT ID & Guide**
	Conversion	**IDLH** 25 mg/m3 [as Cr(III)] See: cr3m3 (/niosh/idlh/cr3m3.html)

Exposure Limits **NIOSH REL** : TWA 0.5 mg/m3 See Appendix C (nengapdxc.html) **OSHA PEL** : TWA 0.5 mg/m3 See Appendix C (nengapdxc.html)	**Measurement Methods** **NIOSH** 7024 (/niosh/docs/2003-154/pdfs/7024.pdf) , 7300 (/niosh/docs/2003-154/pdfs/7300.pdf) , 7301 (/niosh/docs/2003-154/pdfs/7301.pdf) , 7303 (/niosh/docs/2003-154/pdfs/7303.pdf) , 9102 (/niosh/docs/2003-154/pdfs/9102.pdf) ; **OSHA** ID121 (http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.html) , ID125G (http://www.osha.gov/dts/sltc/methods/inorganic/id125g/id125g.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Appearance and odor vary depending upon the specific compound.

Properties vary depending upon the specific compound.					

Incompatibilities & Reactivities Varies

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes; sensitization dermatitis

Target Organs Eyes, skin

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet or contaminated
Change: No recommendation

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Water flush promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
NIOSH/OSHA

Up to 2.5 mg/m3:
(APF = 5) Any quarter-mask respirator.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*

Up to 5 mg/m3:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*
(APF = 10) Any supplied-air respirator*

Up to 12.5 mg/m3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode*
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.*

Up to 25 mg/m3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter*
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html)

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International Chemical Safety Cards

DIESEL FUEL No. 2

ICSC: 1561

UNEP

National Institute for Occupational Safety and Health

NIOSH

Fuels, Diesel, No. 2
Diesel oil No. 2
Gasoil - unspecified

ICSC # 1561
CAS # 68476-34-6
RTECS # LS9142500
UN # 1202
EC # 649-227-00-2
October 26, 2004 Validated

3

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water spray, alcohol-resistant foam, dry powder, carbon dioxide.
EXPLOSION	Above 52°C explosive vapour/air mixtures may be formed.	Above 52°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Dizziness. Headache. Nausea.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin. Redness.	Protective gloves.	Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Personal protection: filter respirator for organic gases and vapours.	Well closed.	Note: H Xn symbol R: 40 S: 2-36/37 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1561

International Chemical Safety Cards

DIESEL FUEL No. 2

ICSC: 1561

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
BROWN SLIGHTLY VISCOUS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 100 ppm as TWA; (skin); A3; (ACGIH 2004).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol.

INHALATION RISK:
A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . The substance may cause effects on the central nervous system. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The liquid defats the skin.

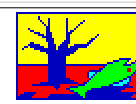
PHYSICAL PROPERTIES

Boiling point: 282-338°C
Melting point: -30 - -18°C
Density: 0.87 - 0.95 g/cm³
Solubility in water, g/100 ml at 20°C: 0.0005
Flash point:
52°C c.c.

Auto-ignition temperature: 254-285°C
Explosive limits, vol% in air: 0.6 - 6.5
Octanol/water partition coefficient as log Pow: > 3.3

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.



N O T E S

Additives to Diesel fuel in winter may change physical and toxicological properties of the substance. This card does not address Diesel exhaust.

Transport Emergency Card: TEC (R)-30S1202

NFPA Code: H0; F2; R0;

ADDITIONAL INFORMATION

ICSC: 1561 **DIESEL FUEL No. 2**

IMPORTANT LEGAL NOTICE:
Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in

	national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

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September 2005

NIOSH Publication Number 2005-149

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Lead

Synonyms & Trade Names Lead metal, Plumbum

CAS No. 7439-92-1	**RTECS No.** OF7525000 (/niosh-rtecs/OF72D288.html)	**DOT ID & Guide**
Formula Pb	**Conversion**	**IDLH** 100 mg/m3 (as Pb) See: 7439921 (/niosh/idlh/7439921.html)

Exposure Limits **NIOSH REL** *: TWA (8-hour) 0.050 mg/m3 See Appendix C (nengapdxc.html) [*Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.] **OSHA PEL** *: [1910.1025] TWA 0.050 mg/m3 See Appendix C (nengapdxc.html) [*Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.]	**Measurement Methods** **NIOSH** 7082 (/niosh/docs/2003-154/pdfs/7082.pdf), 7105 (/niosh/docs/2003-154/pdfs/7105.pdf), 7300 (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf), 7700 (/niosh/docs/2003-154/pdfs/7700.pdf), 7701 (/niosh/docs/2003-154/pdfs/7701.pdf), 7702 (/niosh/docs/2003-154/pdfs/7702.pdf), 9100 (/niosh/docs/2003-154/pdfs/9100.pdf), 9102 (/niosh/docs/2003-154/pdfs/9102.pdf), 9105 (/niosh/docs/2003-154/pdfs/9105.pdf); **OSHA** ID121 (http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.html), ID125G (http://www.osha.gov/dts/sltc/methods/inorganic/id125g/id125g.html), ID206 (http://www.osha.gov/dts/sltc/methods/inorganic/id206/id206.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description A heavy, ductile, soft, gray solid.

MW: 207.2	BP: 3164°F	MLT: 621°F	Sol: Insoluble	VP: 0 mmHg (approx)	IP: NA
Sp.Gr: 11.34	Fl.P: NA	UEL: NA	LEL: NA		

Noncombustible Solid in bulk form.

Incompatibilities & Reactivities Strong oxidizers, hydrogen peroxide, acids

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypertension

Target Organs Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: Daily
Remove: When wet or contaminated
Change: Daily

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap flush promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
(See Appendix E) (nengapdxe.html)
NIOSH/OSHA

Up to 0.5 mg/m3:
(APF = 10) Any air-purifying respirator with an N100, R100, or P100 filter (including N100, R100, and P100 filtering facepieces) except quarter-mask respirators.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 10) Any supplied-air respirator

Up to 1.25 mg/m3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.

Up to 2.5 mg/m3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 50 mg/m3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-

pressure mode

Up to 100 mg/m^3:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0052 (/niosh/ipcsneng/neng0052.html) See MEDICAL TESTS: 0127 (/niosh/docs/2005-110/nmed0127.html)

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September 2005

NIOSH Publication Number 2005-149

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Coal tar pitch volatiles

Synonyms & Trade Names Synonyms vary depending upon the specific compound (e.g., pyrene, phenanthrene, acridine, chrysene, anthracene & benzo(a)pyrene). [Note: NIOSH considers coal tar, coal tar pitch, and creosote to be coal tar products.]

CAS No. 65996-93-2	**RTECS No.** GF8655000 (/niosh-rtecs/GF841098.html)	**DOT ID & Guide** 2713 153 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=153) (acridine)
	Conversion	**IDLH** Ca [80 mg/m3] See: 65996932 (/niosh/idlh/65996932.html)

Exposure Limits

NIOSH REL : Ca TWA 0.1 mg/m3 (cyclohexane-extractable fraction) See Appendix A (nengapdxa.html) See Appendix C (nengapdxc.html)

OSHA PEL : TWA 0.2 mg/m3 (benzene-soluble fraction) [1910.1002] See Appendix C (nengapdxc.html)

Measurement Methods

OSHA 58 (http://www.osha.gov/dts/sltc/methods/organic/org058/org058.html)
See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Black or dark-brown amorphous residue.

Properties vary depending upon the specific compound.

Combustible Solids

Incompatibilities & Reactivities Strong oxidizers

Exposure Routes inhalation, skin and/or eye contact

Symptoms dermatitis, bronchitis, [potential occupational carcinogen]

Target Organs respiratory system, skin, bladder, kidneys

Cancer Site [lung, kidney & skin cancer]

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: Daily
Remove: No recommendation
Change: Daily

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 1415 (/niosh/ipcsneng/neng1415.html) See MEDICAL TESTS: 0054 (/niosh/docs/2005-110/nmed0054.html)

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May 11, 2010

Project 15317.000

Mr. Tony Natera
Hazardous Substance Engineer
Northern California Coastal Cleanup Operations Branch
Department of Toxic Substances Control
700 Heinze Street, Suite 200
Berkeley, California 94710

Subject: **Addendum – Health and Safety Plan**
Marsh Landing Generating Station
3201 Wilbur Avenue
Mirant Contra Costa Power Plant
Contra Costa County, California

Dear Mr. Natera:

On behalf of Pacific Gas and Electric Company (PG&E), AMEC Geomatrix, Inc.(AMEC) has prepared this addendum to the *Revised Health and Safety Plan* (HASP), dated April 2010 for the Marsh Landing Generating Station (MLGS; project area) at Mirant's Contra Costa Power Plant (CCPP).

At the request of the California Department of Toxic Substances Control (DTSC) staff, air monitoring will be conducted in the project area during AMEC investigation activities. Air monitoring activities will consist of:

- periodic monitoring of dust concentrations in the work zone using a Personal DataRAM pDR-1000AR personal aerosol monitor(pDR), and
- periodic monitoring of volatile constituents in the work zone using a photoionization detector (PID) fitted with a 10.6 electron volt (eV) lamp.

Readings from the pDR and PID will be taken at a minimum of approximately once per hour and recorded in the field notes. Additionally, the dust action level as stated in the HASP is corrected to indicate 5 milligrams per cubic meter (mg/m^3). This is the OSHA permissible exposure limit (PEL) for respirable dust. This is considered a conservative action level because concentration-based action levels calculated using current site data would be higher than this. If readings on the pDR of 5 mg/m^3 are greater or readings on the PID of 20 parts per million or greater are sustained for 5 minutes, work in the area will be stopped and the need for additional personal protective equipment will be re-evaluated.

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AMEC Geomatrix

amec

Mr. Tony Natera
Department of Toxic Substances Control
May 11, 2010
Page 2

Please do not hesitate to call the undersigned if you have any questions or require additional information.

Sincerely yours,
AMEC Geomatrix, Inc.

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Jms/jh
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cc: Neil Ziemba, PG&E
Ken Simas, WAU & Company